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THE AUTOMOBILE AND MOTOR REVIEW

WEEKLY

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THE first appearance of the 1903 model "Peerless"

car was at the Brighton

Beach races, Aug. 23 last. The machine there entered, and which is shown in the accompanying photographs, was identical with the touring model in mechanism, being converted to a racer only by the use of a light racing body, large wheels (36 inches in diameter) and flattened springs. The regular machine is to have a tonneau body and 32-inch wheels.

Several changes have been made in this machine from the attractive touring car of

PEERLESS RACING CAR

net, and in an entirely new circulating and radiation system, which will be taken up in detail later.

RUNNING GEAR.

The side view of the racer presented herewith shows clearly the general outlines of the machine, and also indicates the channel iron frame construction, the arrangement of steering gear through a steep-pitch screw and nut, the arrange-

somewhat in a U shape, and the rear ends of the 2-inch angle irons constituting the false

frame are riveted to this sill. The front ends of these same angle irons are bent up just forward of the motor to meet the front cross sill of the main frame. The motor and speed gear box are supported on the false frame in the usual manner. The "pump handles" carrying the front ends of the front springs are riveted into the channel side sills, instead of being made with an L-shaped base as in the French machines. The rear springs are



SIDE VIEW OF PEERLESS RACING CAR—1903 TOURING MODEL WILL HAVE TONNEAU BODY AND 32-IN. WHEELS.

1902, the most notable of these being an increase in the cylinder dimensions of the twin cylinder motor to 4 1-2-inches bore by 5 1-2-inches stroke, and the substitution of sliding gears in the speed-changing mechanism for the small individual clutches formerly used. A noticeable external change has likewise been made in the shape of the motor bonnet, which is now of square outlines, patterned after the Mercedes bon-

net, and the interlocking device on the gear shifter. The main frame is bent up in two halves of 2-inch channel steel, each half forming a side sill and a half of the end sills. The two halves thus formed are joined at front and back by fish plates. But one intermediate cross sill is used, this being under the driver's seat, between the speed gear box and the muffler. It is bent downward,

liberally proportioned for easy riding, and will compress about 4 inches from their shape when fully loaded. The front springs, which can compress about 3 inches, are provided with rubber buffers to protect them from abnormal shocks.

MOTOR AND CLUTCH.

The motor has two cylinders cast together, the cylinder heads also being in-

tegral with the cylinders to avoid the possibility of leakage from the water jacket into the cylinders. Both pistons work on one elongated crank pin, the mechanical vibration thus caused being found less objectionable than that due to the irregular impulses necessary with opposite cranks, and the cranks are carefully balanced to reduce vibration as much as possible. A float feed vaporizer of modern design is used.

A centrifugal ball governor is carried on the forward end of the 2 to 1 shaft. It acts on a lever in Fig. 2, the upper end of which connects with a throttle valve in the inlet valve casing. A rod connection from the same lever is worked by a small accelerator pedal under the operator's right foot. As the governor balls expand this pedal rises, and by pressing it down the throttle valve is held open against the action of a governor. When the foot is removed from the pedal, as to apply the brake, the governor again acts on the throttle.

The flywheel clutch is illustrated in section in Fig. 3. It is modeled somewhat after the Renault clutch, the spring pressure being self-contained and impressing no end thrust on either shaft when the clutch is in engagement. In the drawing, *A* is the crank shaft, whose end is prolonged clear through the clutch as shown. On the end is a bushing, surrounded by the end of a short shaft *B*, flexibly connecting the clutch with the first shaft of the speed gears. On *B* is keyed the male portion *C* of the clutch, which is faced with

against the ball thrust bearing *G*, this fork being carried on a rock shaft just below the clutch. An arm rising from the same rock shaft to the right of the clutch is pushed forward by the clutch pedal under the operator's left foot. The brake pedal under the right foot locks with the clutch

The squared shaft, *A*, does not go clear through the case, but terminates in an end of reduced diameter running in a bushing in the end of a short shaft *B*. This shaft has a wide pinion *C* cut integral with its rear end, and meshing with a cast steel gear *D* bolted on the jack shaft *E*. This

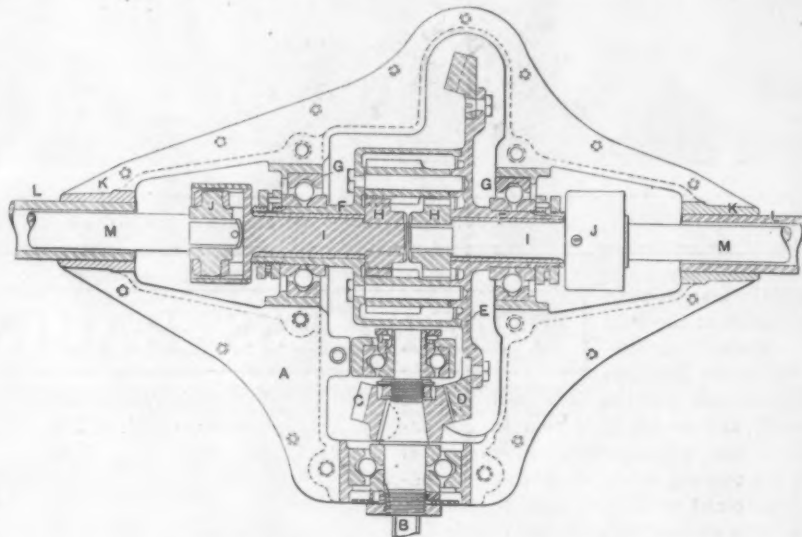


FIG. 5—DRIVING GEAR AND DIFFERENTIAL.

pedal in the usual manner when pressed down, releasing the clutch, and it applies a double-acting metal jaw brake on the transmission shaft just back of the gear box.

SPEED CHANGING GEARS.

The gear box contains two principal

pinion and gear are always in mesh. The first or lowest speed is imparted to the shaft *A* by the pinion *F*, keyed on *E*, and meshing with gear *G*, which is bolted to a carriage *H* squared internally to fit the square portion of *A*, on which it slides. A second gear, *J*, is also bolted to *H*, and

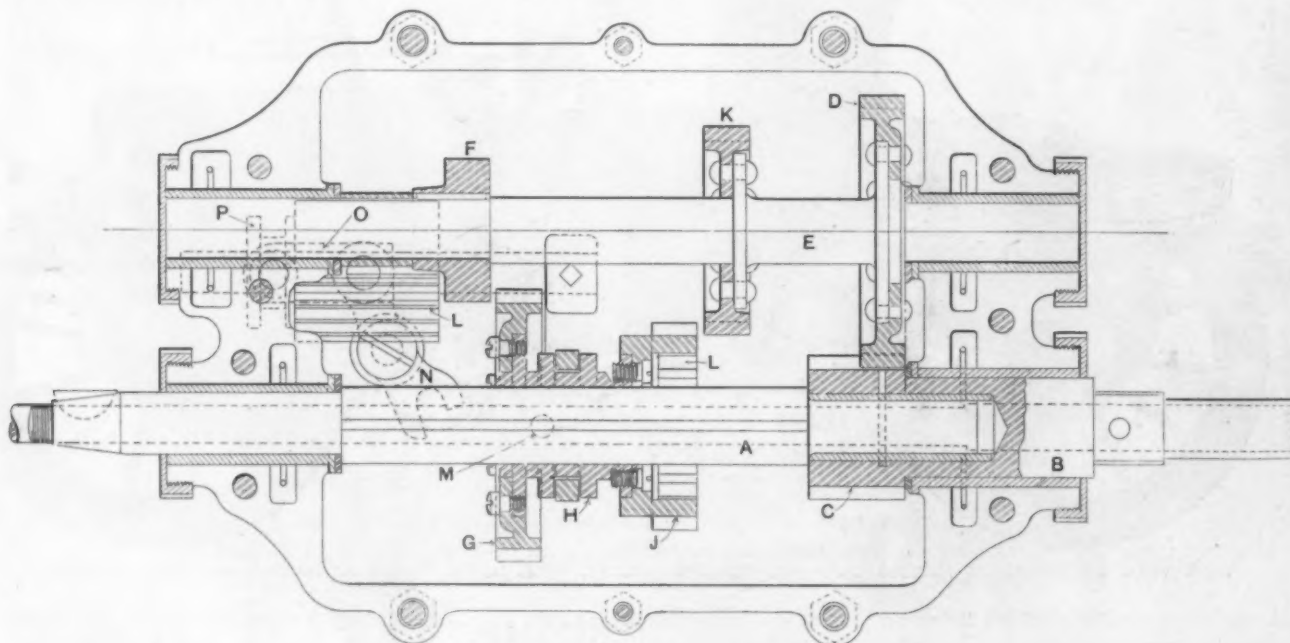


FIG. 4—SPEED CHANGING GEARS.

leather and works inside the flywheel rim, which is made in two parts as shown. A coiled spring *D* bears against the ball thrust collar *E*, forcing *C* into normal engagement with the internal cone *F*. The clutch is released by the pressure of a fork

shafts in a horizontal plane, the box being divided into upper and lower halves in this same plane. A plan view of the gears with the upper part of the box removed is shown in Fig. 4. The case itself is aluminum, with long boxes for the two shafts.

when slid into mesh with gear *K* gives the second speed. Gear *J* is cut out internally at *L* in the form of an internal gear, and for the third speed this is slid forward past gear *K* till it fits over the free end of pinion *C*. In this condition shaft *E* revolves

idly, and the power of the motor is transmitted directly from *B* to *A* through *C* and *J*. The drum of the pedal brake above mentioned is keyed on the taper at the rear end of shaft *A*, and with it is cast one-

slid forward to mesh with pinion *F*. This is accomplished through the motion of the carriage *H* backward past the first speed position. Gear *G* then leaves *F* and meshes with *L*, and simultaneously a pin



FIG. 6—FRONT OF PEERLESS RACER.

half of a universal joint. The other half of this joint is carried on a shaft, whose other end has exactly similar joints, through which it drives a bevel pinion meshing with the large bevel gear on the

seen dotted at *M* engages the forked end *N* of a short lever which operates through a link *O* and a yoke (not shown) on the grooved collar *P* at the rear end of *L*. This carries *L* forward to engage *F*, and it is

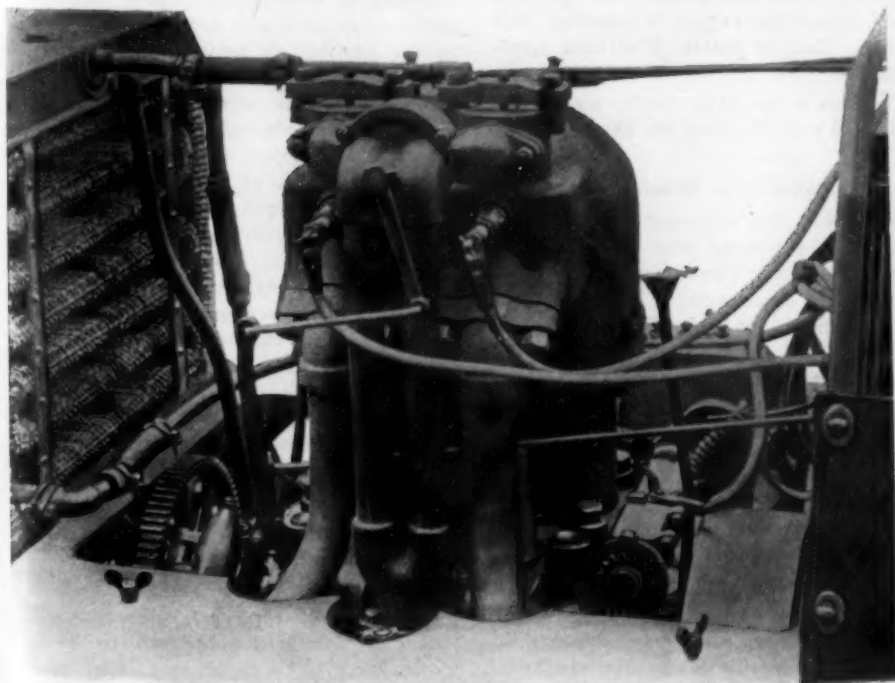


FIG. 2—THE MOTOR IN POSITION.

rear axle. Reversal is accomplished through the wide-faced intermediate pinion *L*. This pinion is normally out of mesh with everything, as the drawing shows, and is brought into action by being

made wide enough so that the continued motion of *G*, until *L* and *F* are fully engaged, does not carry *G* out of mesh with *L*. A spring, not shown, returns *L* to its neutral position.

REAR AXLE.

The arrangement of the bevel differential, and the inner of the rear axle is fully shown in horizontal section in Fig. 5. An important change in arrangement has been made in this model, in the fact that the casing surrounding the differential and gears, instead of being centrally split in the vertical plane, is split in the horizontal plane, allowing the contained parts to be readily lifted out on removal of the top half. In the drawing *A* is the bottom half of the case; *B* is a short shaft connecting with the rearmost universal joint and squared to telescope into a squared axial hole in the shaft carrying the bevel pinion *C*. This permits the axle to rise and fall with the road surface without putting end strain on the shaft or universal joints. Pinion *C*, which is of hardened tool steel, meshes with the cast steel gear *D*, bolted to plate *E* forming part of the shell sur-

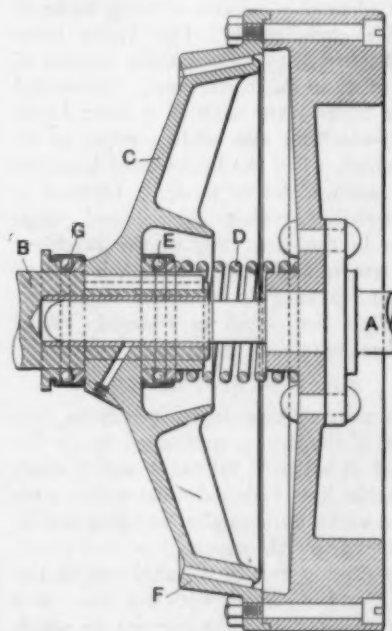


FIG. 3—CLUTCH AND FLYWHEEL.

rounding the differential gears halves of the shell are provided with *FF* which turn in adjustable bearings *GG*, which take the thrust caused by the compensating gear faces cut to a vertical angle as is the French principal gears *HH*. Short shafts *I* carry universal joints. These cause, on machines have dish axles itself degrees, corresponding half of and, b-

ber, receive the fixed tubes *LL* enclose the revolving shafts *MM*. The tubes *LL* carry the spring seats and extreme outer ends are surrounded by double ball bearings, with 3-4-inch hubs on which the hubs of the rear wheels turn. The ends of shafts *M*, on which the stresses are purely torsional, require no bearings. They are simply squared, and over them are fitted discs with slotted jaws to engage slots in the outer ends of the wheel hubs. Thus the whole weight is carried by tubes *L*, and shafts *M* transmit the driving force only. The outer ends of the hub are covered with cast metal caps in the usual way.

As the drawing shows, the bevel driving pinion *C* (Fig. 5) is supported between two ball bearings, both of which are adjustable. The arrangement is such that by undoing four bolts the pinion may be removed for inspection.

The brakes on the rear wheels are single-acting, as is usual, and are separately adjustable instead of being made to equalize each other. The brake lever pulls backward to tighten them instead of forward as in most machines. Connected to the brake lever shaft is a short backward-reaching arm with a roller at its end, which, when the brake lever is pulled back, swings down, pushing forward a downwardly-swinging cam-shaped arm, visible in the side view of the machine. This arm is connected through a link to an arm reaching up from the rock shaft by which the clutch is released. Thus both brakes release the clutch.

MOTOR LOCKING DEVICE.

The gear-shifting lever, which is the longer of the two, is prolonged below the bracket in which it fulcrums, and a short adjustable link with universal joints connects it with a horizontally swinging arm in a carrier below the cross sill at that point. This swinging arm is widened out in the carrier, and is pierced with five holes at a uniform radius from the fulcrum on which it swings. Into one or another of these holes a locking pin connected to a small bell crank and link to the arm rising from the clutch when the clutch is raised, passing through the holes, permitting a drop, and when the clutch cannot be dropped into one hole is one for the other. There is also a hole in the first hole, so that there is no possibility of attempting to mesh the new gear before the old is disengaged. The new gear is engaged by a link and which is connected to the bonnet and the port-

tions, seen clearly in the front view of the car. These are connected by vertical radiating tubes, and the upper tank, into which the water is discharged from the engine jacket, has a steam outlet passing down below. The zigzag radial tubes are patterned after the latest Panhard type, and consist of a number of very small tubes laid side by side horizontally, with the radiator flanges deep enough to include the whole set of tubes. There is no direct connection between the tank and these tubes, but the water from the pump passes to the upper ends of these tubes thence dividing itself in multiple between them, and going zigzag to the bottom, whence it passes to the engine jacket. The pump draws its water from the lower tank, to which it is connected by a short downwardly-sloping pipe, preventing any possible formation of steam in the pump.

The engine is lubricated principally by a McCanna multiple pressure lubricator, which feeds oil to the cylinders and crank pins. The end bearings of the crank shaft have oil pockets and ring oilers, and require only occasional refilling. The shaft bearings of the gear case, which, like the engine crank case, is of aluminum, are oiled in the same way, there being an entire separation between shaft lubrication and the oil in the gear box itself.

The gasoline tank under the seat is made to hold 9 to 12 gallons at the option of the purchaser. About 5 1-2 gallons of water are carried. The touring machine is geared to run 30 miles an hour at 900 revolutions per minute of the engine, at which speed the engine is rated to give 16 h.p. This, of course, is without acceleration.

Ignition is by jump spark, with Splitdorf coils and De Dion dry batteries.

Millionaires as Manufacturers.

Following the allotment of exhibition space at the coming New York automobile show to the Pan-American Automobile Co., of Mamaroneck, N. Y., the enterprise started by Albert C. Bostwick and his friend, B. B. McGregor, recently deceased, both very wealthy, comes the news from France that William K. Vanderbilt, Jr., who returned to the United States within the past fortnight, is backing Leon Bolee, the French constructor, in the building of a small number of automobiles of the Daimler-Mercedes type, to cost about \$6,000 each, which are intended especially for the American market. A gasoline tonneau following closely the German lines has just been completed in New York City for James Macnaughton, of the Automobile Club of America, and it is reported that several of the other club members have joined in a syndicate to have similar machines built here for each of them. Mr. Macnaughton's machine was designed and built by John L. Schultz.

CAUSES OF FAILURES IN THE BRITISH RELIABILITY RUN.

MARKS LOST BY CONTESTANTS.

Mishaps Ranging From the Breaking of an Axle to Failure of Induction Coils to Function—Success of White Steam Cars Causes Inquiry from Possible Purchasers—New Dust Preventers.

Staff Correspondence.

LONDON, Sept. 30.—The British automobile fraternity is still in suspense with regard to the awards in the late 650-Mile Reliability Trials. The placing of the many contestants has thrown so much work upon the Judges' Committee (an honorary body by the way, and formed of earnest men who nevertheless have their own concerns to look to) that I understand they cannot be made public for several days. In the meantime, certain unofficial but reliable information is available as to the majority of causes which underlie the loss of running marks during the six days on the road. It is of much interest to consider some of these. Thus the single point lost by the 5 horse power Peugeot was due solely to the accidental stopping of the engine by the driver, and, as all owners of single-cylinder cars are aware, this under the particularly awkward driving stresses of the trials was by no means an unlikely thing to happen. The 8 horse power De Dion, driven by the old crack cycle racer "Jack" Stocks, lost its single mark for the breakage of a high tension connection, while the 15 horse power Panhard was similarly docked for changing an accumulator. Many cars lost marks from punctures and, having regard to the particularly puncturesome condition into which some of the Surrey silex-made roads get after but two days' drought, it is only remarkable that more marks were not lost all through on this count. The idea of imposing a loss of marks for stoppages for tire repairs was to oblige the entrants of cars to consider the advisability of fitting adequate tires to their vehicles, as certain manufacturers have hitherto shown a weakness for under-tiring their cheaper vehicles on the score of expense. Indeed, if one goes carefully through all the causes of failure given, they will, with but few exceptions, be found to be of the most trivial nature and such as the average motorist regards with perfect equanimity when they occur during even a short run.

THE IMPORTANT FAILURES.

The most serious were the failures of the two New Orleans cars, one a 14 horse power car driven by Mr. Astell, the managing Director of the New Orleans Co., and the other a 12 horse power New Orleans driven by W. Exe, otherwise Claud Johnson, the Secretary of the Automobile Club. The first named broke his live axle on the penultimate day of the trials and the fracture showed that the part must have had a flaw when it was

built into the car, for six-sevenths of the section showed red rust, the only bright portion being a strip about one-quarter inch wide through the center. The car had been driven quite 2,000 miles with the axle in this condition, a fact that speaks volumes for the quality of the material used.

W. Exe's vehicle failed on the second day through the breaking of one of the spindles of the differential gear pinions, but this was put right before the evening of the next day and the car, although withdrawn from competition, accompanied the other vehicles through the remainder of the trials.

The 8 horse power Clement owes the majority of its losses to poor driving, the driver being ill-advised enough to attempt the climb of the last hill on the first day, knowing he was short of water, rather than lose a few marks for refilling his tank. The result was that he overheated his engine and ruined his valves, and the car ran badly considering the excellent running generally made by these smartly constructed vehicles, for the rest of the week.

One of the 22 horse power Daimlers had particularly bad luck. She had earned full marks for the four first days, but just as the word to go was given for her at the foot of Westerham Hill, the chain rotating the commutator jumped off its chain-wheels, and neither chain nor wheels being marked—a woeful omission, by the way—no less than 2 hours 17 min. were lost in a vain attempt to replace the chain on the wheels in the proper position for firing the four cylinders. This labor was in vain, because after all her driver was obliged to relinquish his efforts to adjust the electrical ignition apparatus, and to light up his lamps and climb the hill on his tube ignition. This, the car did very well indeed, so that the bad fortune which assailed this splendidly built vehicle was entirely due to an error of judgment on the part of her driver.

The 10 horse power Wolseley owes the loss of marks chiefly to the unreasonable desire of a horse to lie down on her motor bonnet, though the poor beast paid with its life for desire to repose on so uncomfortable a couch. Then again there is the 12 horse power Brush, a car constructed by the Brush Electric Light Co., of this city, under the experienced eye of I. S. Cutchley, at one time the works manager of the Daimler Co., and who perhaps knows as much about petrol cars as here and there one. Her failure was due entirely to faulty and defective coils of a new type which in short, experimental trips had given excellent results, but which chose the days of these particular Trials to behave in an unseemly manner.

THE LOCOMOBILE CARS.

Perhaps it would interest my readers more particularly if I referred in detail to the performances of the Locomobile steam

cars, one of which, a 5 1-2 horse power car, came out on top in Class B, for vehicles costing from £150 to £200. This car, No. 10, was debited forty-eight marks for her chain coming off, but nevertheless, and including a few losses for taking water, she gained 1,752 marks out of a possible 1,800. No. 20, another 5 1-2 horse power Locomobile, in addition to her losses for water-filling, lost heavily on one day by the fact of her driver's coat—Ginter it was—catching in and jamming the throttle lever so that he could not shut off steam and the car charged a wall, causing damage which took some time to repair. No. 9, another 5 1-2 horse power Locomobile lost a few marks for tank replenishment in addition to a few other marks for chain adjustment.

THE WHITE STEAM CARS.

The cream of the performances of the steam cars entered must, however, be credited to No. 29, the 6 horse power White steam car, driven by Mr. White, which went through most successfully every day earning the full total of 1,800 marks without a single deduction. She was splendidly handled from start to finish, and has aroused the greatest admiration of the votaries of steam on this side. The only other vehicle to equal this performance was the 20 horse power Wolseley, a petrol-driven car, built by the Wolseley Tool & Motor Co., of Adderley Park, Birmingham. This firm has always done well in public trials in this country, indeed its cars are throughout sound and solid examples of careful, honest English design, construction and finish. Mr. Austin, the managing director of the company, who is responsible for their construction, is the apostle of the horizontal engine in this country and certainly his ideas are supported in practice whenever the vehicles turn out.

The failure of the two high-powered Wolseleys entered for the late Gordon Bennett race, must not be written up against this firm's record, for the reason that the running of the cars was practically nullified by the necessity of fitting English-made induction coils, which at present are not obtainable suitable for powerful high speed engines. Had the well-known and effective Bassie-Michel coils been fitted to these cars, they would, I am assured, have made a very different showing in the great race.

AMERICAN STEAM CARS.

Returning again to the White steam cars, it is a matter of much conjecture here, why these admirable vehicles are not obtainable. Were they now obtainable, with all their blushing honors thick upon them, for mark you, the White second string only lost 10 marks throughout the week, they would find a very large number of purchasers. Whoever are at the back of the White interest in the States are missing golden opportunities by their disregard of the British market.

Another American steam car has arrived among us and that is the Geneva, built by The Geneva Automobile & Mfg. Co., of Ohio. I have not yet experienced the running of this vehicle, but the firm of engineers who have her in hand, know a good thing when they see it, and assure me that the car is a success. I hear that she burns heavy oil most satisfactorily and that, having regard to the comparatively high price of petrol in this country, would alone assure her much consideration. Her vaporizing system and burner are kept free of carbon deposits by blowing through with superheated steam after use, and Messrs Cloud & Nichols assure me that this works perfectly. Since the car came into their possession they have run her over 1,000 miles with the best possible results. A small syndicate has been formed to import these cars.

THE TIRE TRIALS.

The tire trials still continue, but therein I regret to say I cannot chronicle such success to the only American tires entered as I have been able to do with regard to American-built steam cars. The entrants of the Goodyear tires have not experienced the best of fortune, although on all sides I hear excellent reports from private users. The new inflation-held Dunlop tires running on three vehicles are doing very well, as are the Collier and Mason Talbot tires, the latter on Michelin lines, a product of the North British Rubber Co. The Martin, a tire in which the cover is held on tight against the side of the felloe by bolting a flange hard up against the same, has been withdrawn. The Midgeley, a pneumatic tire on Michelin lines, the cover of which is made with a breadth of what for a better name I am constrained to call chain-mail vulcanized into the cover and beneath the tread, is doing excellently on the road, but appears to require pumping at night after the return to the garage. This is probably due to valve defects, which—as excellent valves, such as the Selaverand are easily obtained—should not be held to debit against the tires themselves.

NEW DUST PREVENTERS.

The designs submitted for the dust prevention in which the club committee had offered a prize of £100, have been rejected by Professors C. Worby Beaumont and C. Vernon Borp as all of insufficient merit to justify a recommendation for their trial. One of the Reliability cars was fitted with a device entered by The Roadway Auto-car Co., but the condition of the roads throughout the six days was not such as to submit the device to test. It consisted of flaps of heavy leather depending from a rail across the top of the back of the tonneau, these flaps blowing out when the car was running, presumably with the idea of stopping the back draught into the tonneau, which is responsible for the plentiful powdering of the tonneau passengers.

AUTOMOBILES IN BALTIMORE.

Hilly and Roughly-Paved Streets a Serious Obstacle to Their Use.

Special Correspondence.

BALTIMORE, Md., October 4.—The hilly and roughly-paved condition of the streets of Baltimore is doubtless responsible for the backward position occupied by this city in the matter of automobiling. The great influence that the state of the streets can have in this matter is well demonstrated by the great popularity of motor vehicles in Washington, with its many miles of level, asphalt paved and beautifully shaded streets, as compared with the few such vehicles in use in Baltimore, less than three hours' distant by automobile.

As there are no public automobiles in use here, and the vehicles used for private pleasure driving are not licensed, there is no official record of the number of such machines in use. Guesses as to the number vary widely, but an average struck places the figures at somewhere between 60 and 75.

SERIOUS OBSTACLE FOR DEALERS.

So hilly and so roughly paved are the streets of Baltimore that it has been stated that some of the manufacturers of automobiles would not sell their finest machines here, as they feared that the claims made for them would not be fully realized, and that the failure would tend to injure the reputation of the makers. Inquiry among the agents for motor vehicles indicates that this is not quite true, however, as the manufacturers and agents are quite willing to sell their machines here as everywhere else, but they always make it a point to warn the purchaser that he must not expect the machine to travel so fast nor to need so few repairs as in a city where the streets are smooth and level.

FIGHT FOR PARK PRIVILEGE.

The drives in Druid's Hill Park are so hilly that at first the park commissioners passed a rule excluding automobiles altogether. The motorists opposed the order, and by the united protests of the members of the Automobile Club of Maryland, which was organized on January 22, 1901, secured the privilege of entrance to the park last winter by appealing to the State Legislature and securing the passage of an act permitting the use of motor vehicles in all parks. But even yet there are certain steep drives from which they are excluded, because of the supposed danger to those who use horse-drawn vehicles.

The club now has twenty-three members, and is officered as follows: President, William Keyser, Jr.; vice president, William S. Belding; secretary, C. Warner Storck; treasurer, William Knabe; governors, Richard J. Leopold, M. Gillet Gill, and W. S. Belding. It has club rooms in the new storage station building of the

Schaum Automobile & Motor Mfg. Co., use and sale of gasoline has met with vigorous opposition, and another hearing is to be had on it. It limits the quantity of gasoline to be kept in storage to one barrel, and forbids altogether its storage in metallic packages of any size and for any purpose, either for sale or use.

SOME OF THE PROMINENT MOTORISTS.

Besides the enthusiastic automobilists who are officers of the club, other well-known motorists are Capt. Isaac E. Emerson, Col. H. H. Barry, F. M. Clotworthy, Albert H. Carroll, R. A. Foolis, William A. Fisher, William E. Hooper, Robert P. Scott, Ernest Knabe and Stanley Zell. Several of these gentlemen own two or more machines and keep abreast of the latest improvements and advancement of the industry by frequent purchases of new machines and sales of their old ones. All of them operate their own machines, but Captain Emerson employs a driver. In addition to the heavy touring car in which he made a trip to Washington in September in two hours eight minutes, over sandy roads with four persons in the vehicle, he has a light, steam carriage, which he took with him on his yacht on a recent trip around the world, and which can be landed in a whaleboat. Mr. Scott has a Napier car, and there are two or three other foreign machines owned here. The steam machine finds most favor, because of its hill-climbing capabilities, and several heavy steam touring cars have been purchased recently by Baltimoreans.

SOME GOOD OUTLYING ROADS.

Fortunately for the motorists, there are a number of roads leading out of Baltimore that are fairly level and good, and which lead through beautiful country. Among the favored routes are those to Reisterstown, Westminster, Frederick and Gettysburg, with a beautiful route down the Valley of Virginia to Winchester or Staunton. There is also a straight and level bit of road out of the city that is paved with oyster shells, but it is not much used by motorists because of the number of trucking teams that use it.

\$200,000 FOR STREET IMPROVEMENT.

There is, fortunately, a strong movement on foot among the city Republican councilmen for the appropriation of \$200,000 for the improvement of a number of the main thoroughfares of the city. Among those whose improvement is strongly urged by the councilmen are North Avenue, west from Greenmount Avenue, which is being repaved east from Greenmount, to make a splendid drive; O'Donnell Street, which is about the greatest thoroughfare in the southeastern section of the city, providing a direct route to the farming district east of the city and a common driveway for all kinds of traffic; Exeter Street, from Baltimore to Front Street (with Belgian block); and Chase Street, east from Broadway (with asphalt).

A very stringent ordinance recently introduced in the Council to regulate the

use and sale of gasoline has met with vigorous opposition, and another hearing is to be had on it. It limits the quantity of gasoline to be kept in storage to one barrel, and forbids altogether its storage in metallic packages of any size and for any purpose, either for sale or use.

CALIFORNIA AUTOMOBILES.

Type of Vehicles, Manufactured in San Jose, In Use on the Pacific Slope.

On the Pacific slope the interest in the automobile is widespread, and the manufacture of machines has been taken up there successfully. In the accompanying illustrations is shown one of the types built by the Golden State Automobile Co. of San Jose, Cal. In this vehicle the internal combustion engine is used in the form of the Brennan opposed motor of 8 horse-power. It is fitted with two flywheels in the form of driving cones, the power being transmitted to the countershaft by means of leather-faced friction discs and thence to the rear wheels by raw-hide pinion and iron gear, making the transmission noiseless. The friction discs are operated by means of a shaft with right and left-hand threads and a foot lever, the mere pressure of the foot giving any amount of friction desired. When the foot lever is released the discs are thrown out of contact with the driving cones. Speed variation, of from zero to a 25-mile speed, is regulated through a hand-lever by the points of contact of the discs and the driving cones.

The motor is cooled by means of radiator coils under the front of the vehicle with a centrifugal pump. The muffler is of the Christman Silent pattern, with two air chambers connected by a system of internal pipes allowing the gases to expand gradually and to pass into the air continuously and without noise.

The setting in which the car is placed in the accompanying photograph is typical of the land of sunshine.

ROAD INSPECTION ENDED.

Officers of New York and Chicago Road Association Reach Chicago.

The 1,000-mile tour of inspection of the proposed route for a macadam road from New York to Chicago, was concluded Sept. 27 when, at 5.40 P. M., William L. Dickinson, treasurer of the New York-Chicago Road Association, and L. C. Boardman, vice-president, accompanied by Mrs. Boardman, arrived at the Auditorium in Chicago in a Toledo steam surrey, operated by George Soules. The party had been on the way twenty-two days, but the actual running time was only 110 hours, stops having been made in all of the important towns along the route to work up interest in the project among the local residents, especially in those sections where improvement of the road was most needed. The entire trip

was not marked by a single accident, notwithstanding the machine was driven at times over some very rough roads, through rain and after dark.

After the party had had dinner, they were given a reception at the clubhouse of the Chicago Automobile Club, President F. C. Donald, of the club, being a trustee of the road association. All of the party arrived in good health, Mrs. Boardman declaring that she had a "glorious experience" in spite of the hardships.

The tourists left New York on September 5, and followed a route passing through Tuxedo, Newburg, Kensington,

than half of the distance, resulted in their being in a fearful condition for travel. While it was observed that the streets in many of the towns were worse, if possible, than the rural highways. It is hoped to secure appropriations from the National Government through the Department of Agriculture and from the several states, counties and towns through which the proposed road will extend, for putting it in good condition throughout its length. Efforts are also being made to interest the automobile clubs, the good roads organizations and the farmers. More than 500 photographs were taken by the tourists



AUTOMOBILES BUILT IN CALIFORNIA—See opposite page.

Binghamton, Elmira, Hornellsville, Salamanca, and Jamestown, N. Y.; Erie, Pa.; Cleveland and Toledo, Ohio, and South Bend and Hammond, Ind. The heavy rains of the past summer, together with the general neglect of the roads over more

along the way. Messrs. Dickinson and Boardman were well received by the town officials, boards of trade and other public organizations in the towns through which they passed, and many of the organizations adopted resolutions approving the project.

FRENCH RACING CONTESTS PROMOTED BY "LE VELO,"

AT GAILLON HILL NEAR PARIS.

Rivalry of French Auto Publications Results in Numerous Race Meets—Flying Starts Only in "Le Velo" Contests—Serpellet Carries Off the Honors Using Alcohol as Fuel—New Records Made.

Special Correspondence.

PARIS, Sept. 25.—The rivalry of the Parisian sporting papers promises a merry war of hill trials this fall, as each has arranged for its own special event, and several quick changes of date have been made in order to forestall the other side. The first of these contests was that promoted by *Le Velo*, on Gaillon Hill, about 75 kilometers out of this city on the Rouen road, September 21, four weeks earlier than at first announced. This contest is the fourth of a series successfully inaugurated by *Le Velo* on December 3, 1899, the competitors including six motor cars and five motor cycles. The hill of Sainte Barbe is at Gaillon, some 75 kilometers northwest of Paris; the greater part of the kilometer course having a rise of 9 per cent., then increasing to 10 per cent. for a short distance with a final grade of but 7 per cent. at the end.

The roads were good and the weather fine on September 21, a number of Parisian motorists coming up by train. The trials were run in the afternoon, all from a flying start. The results were as follows:

General Class.—Le Blon (Gardner-Serpellet), 40 4-5; Serpellet (Gardn.-Serpellet), 41 2-5; Le Blon (Gardn.-Serpellet), 42 4-5; Demester (Griffon), 46 1-5; Baras (Darracq), 46 3-5; Barre (Bruneau), 57; Lamberjack (Griffon), 1:04 1-5; Carreau (Carreau), 1:07 3-5; R. Hanriot (Passy-Thel.), 1:12 3-5; Labitte (Werner), 1:17 4-5; Peron (Werner), 1:19 2-5; Robin (Lamaudière), 1:19 3-5; Ardiot (Lamaudière), 1:23 2-5; Abbott (Locomobile), 1:31 2-5; Barre (Bruneau), 1:44 1-5; De Richemond, 1:45 2-5; Breuil (Breuil), 1:45 3-5; Remay (Pelletier), 1:45 4-5; M. Jolivet (Pecourt), 1:53 1-5; Valentin (Ader), 1:58 3-5.

First Class.—Cars weighing from 650 to 1,000 kilos.: Le Blon (Gardn.-Serpellet), (965 k.), 40 4-5; Serpellet (id.), (940 k.), 41 2-5.

Second Class.—Cars weighing from 400 to 650 kilos. Explosion motors. Baras (Darracq), (640 k.), 46 3-5; De Richemond (Aster), (630 k.), 1:45 2-5; Valentin (Ader), (645 k.), 1:58 3-5.

Steamers.—Le Blon (Gardn.-Serpellet), (645 k.), 42 4-5.

Third Class.—Voiturettes weighing 250 to 400 kilos. Explosion motors. R. Hanriot (Passy-Thellier), (400 k.), 1:12 3-5.

Steam.—Abbott (Locomobile), (360 k.), 1:31 2-5.

Fourth Class.—Motorcycles weighing from 50 to 250 kilos. Demester (Griffon), (125 k.), 46 1-5.

Fifth Class.—Motorcycles weighing from 30 to 50 kilos; (a), 30 to 50 kilos. 1, Barré (Bruneau), (49 k.), 1:04 1-5; 2, Lamberjack (Griffin), (49 k.), 1:04 1-5; 3, Carreau (Carreau), (49 k.), 1:07 3-5; 4, Labitte (Werner), (47 k.), 1:17 4-5; 5, Péron (Werner), (47 k.), 1:19 2-5; 6, Robin (Lamaudière), (47 k.), 1:19 3-5; 7, Ardriot (Lamaudière), (47 k.), 1:23 2-5; 8, Mme. Jolivet (Pécourt), (37 k.), 1:53 1-5.

(b) Not over 30 kilos. 1, Barré (Bruneau), (28 k.), 1:44 1-5; 2, Breuil (Breuil), (29 kil. 500), 1:45 3-5; 3, Remay (Pelletier), (27 k.), 1:45 4-5.

After the scheduled runs some supplementary trials were made as follows: Serpollet (Gardner-Serpollet), 44; Remay (Pelletier), 1:43; Breuil (Breuil), 1:35; Lamberjack (Griffin), 52 1-5; Demester (Griffin), 52 1-5; Pécourt (Pécourt), (37 k.), 1:19; Demester (Griffin), 45 2-5; Barré (Bruneau), 58 2-5; Valentin (Ader), 1:42 1-5; Deckert (Deckert), (640 k.), 1:35 1-5.

The honors of the day go to steam and Serpollet, though the designer in his Whale took second place to Le Blon. The Whale—which arrived at Gaillon on the previous evening fresh from a tour of Normandy in which some 1,700 kilometers were covered in eight days—wins the gold medal offered by the Minister of Agriculture for the first car using alcohol. The Darracq car driven by Baras made an excellent record. Madame Jolivet competed in the light class of cycles. The record of last year, made by Edge, was 1 minute 3 2-5 seconds; this year it has been cut to 40 4-5 seconds, a speed of 88.23 kilometers to the hour. The start was timed by Mr. Marais and the finish by Mr. Gaudichard, the latter using two watches in order to avoid any such trouble as attended the Deauville meet.

Foreign Notes.

An exhibition of motors, agricultural implements and automobiles using alcohol as fuel was held at Conegliano Veneto, Italy, last month.

Though no official action has yet been taken, a report is current that Germany will be represented in the Gordon Bennett cup race of 1903 and that the Automobile Club of Germany has already decided upon Henri Fournier, Count Zborowski and Baron Pierre de Crawhez as its representatives, all driving the Daimler-Mercedes cars of 60 horse power.

During the present month an exhibition of alcohol motors, lamps and heating apparatus will be held in Madrid under the patronage of Alphonso XIII. The spaces will be free to all exhibitors, so that the only cost will be for transportation and arrangement of the stands. It is expected that many French and German firms will avail themselves of this opportunity for the conquest of new markets.

ELECTRIC VEHICLE PERFORMANCE.

Technical Discussion of Results Already Accomplished and Possibilities of Improvements.

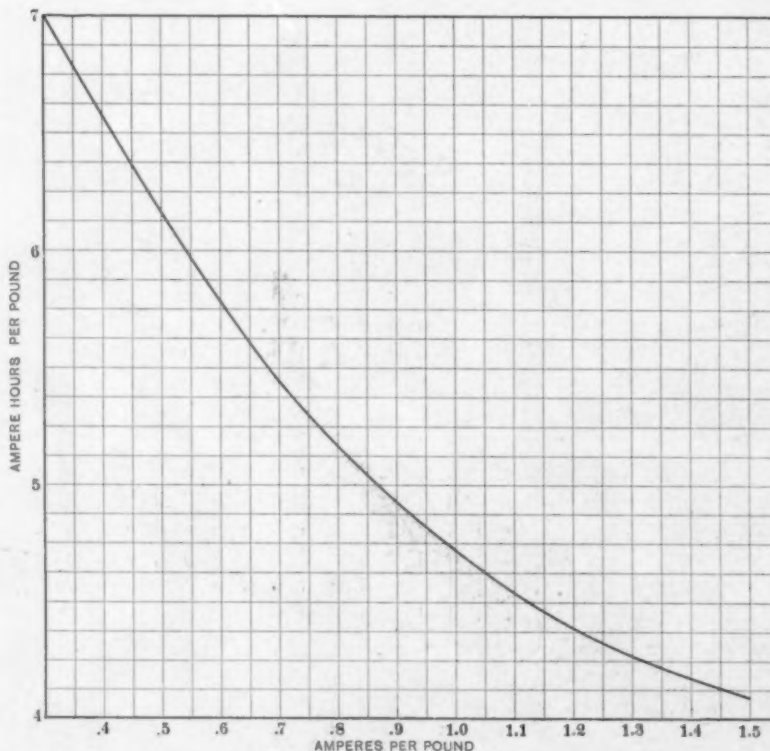
BY FREDERICK J. NEWMAN.

In consideration of the electric vehicle the question of mileage, weight of battery and watt hour capacity of batteries presents a very interesting study and one which is often misunderstood. In speaking of a hundred mile battery, as users generally do, they hardly understand that weight of vehicle and battery, also speed, play a very important part. They also speak of a life of 5 or 10 years without knowing what the total mileage will be or how near this mileage can be run today, under certain restricted conditions and in good design.

I present herewith curves and modified tabulated data made from tests of repre-

or its equivalent variation in size of cell.

In a general comparison the following is noticeable: First, a decrease in weight means a greater proportionate increase in power consumed, or the greater the weight the less are the number of watts required per ton mile. This is due to several reasons, important among which is the lower efficiency of smaller apparatus and the fact that the area exposed to wind resistance is not proportionately greater with an increase in weight; second, an increase in speed means a greater proportionate consumption of power, due principally to the wind resistance varying with the square of the speed instead of in a direct proportion; third, a greater possible mileage with increase in weight due to deductions given as "first," also with same voltage a greater capacity of battery due to increase in capacity per



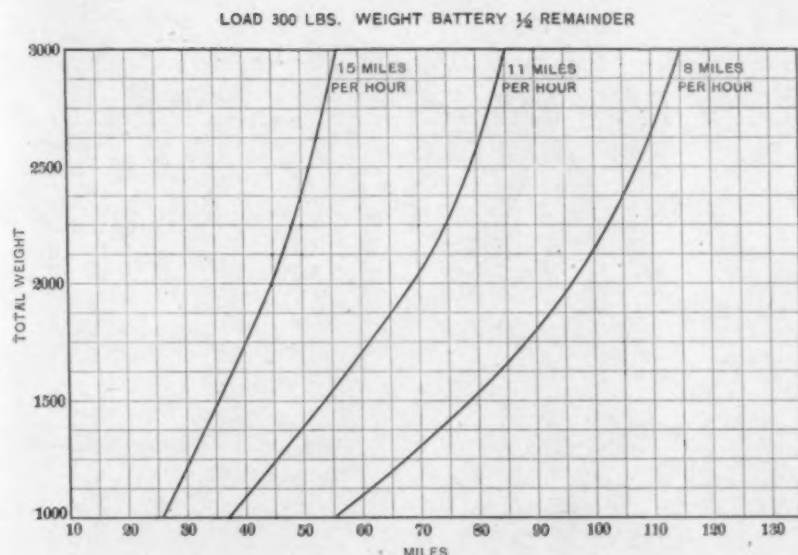
CURVE A—RELATION BETWEEN RATE AND CAPACITY, 40-LB. CELL.

sentative American vehicles and batteries, which will be used in this discussion.

Table A represents data when vehicles run at 15 miles an hour, B at 11 miles an hour, C at 8 miles an hour. In each case the mileage was reduced to what it would be if 40-lb. cells of a well-known make were used. Curve A is plotted between rate discharge and capacity for such a cell and represents the average throughout its life. Curve B represents weights of vehicles and mileages at different speeds, where load is 300 lbs. and the battery is taken at one-half of the remainder of the total weight. Curve C represents relative capacities and weights of cells of the same make. Curve D represents mileage and variation in voltage

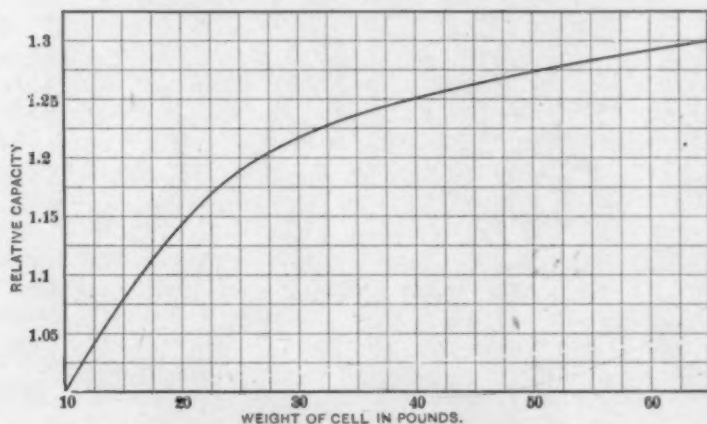
pound weight of battery with increase of weight in cell shown by curve C. The efficiency of motors at different voltage varies, a lower efficiency at lower voltage, but this is not so marked as the variation in capacity of cell; fourth, on account of the above the greatest mileage obtainable is at the lowest speed, with the heaviest vehicle and the lowest voltage. This means also the greatest battery life, for life of battery is increased with a decrease in discharge rate.

Take the case of No. 5 in table C. Here we have 153 miles on a level track or 115 miles in service under the worst city conditions. A battery of this type has given 175 discharges at the rate of 1 ampere per pound. Here the rate is 1-3 as much, but

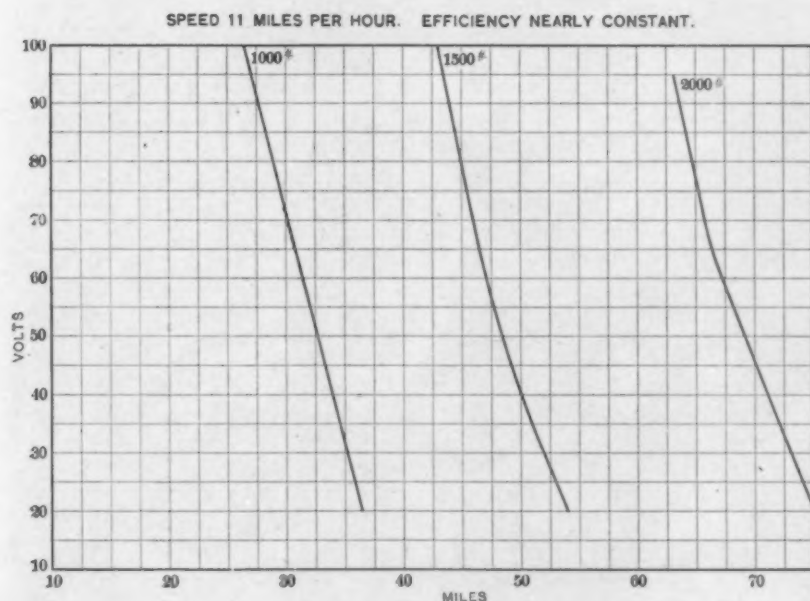


CURVE B—RELATION BETWEEN WEIGHT OF VEHICLE AND MILEAGE.

NOTE: CAPACITY IS EXPRESSED IN OUTPUT PER UNIT OF WEIGHT.



CURVE C—RELATIVE CAPACITY AND WEIGHT OF CELL.



CURVE D—VOLTS AND MILEAGE.

(See Numerical Tables on Page 10.)

it is not correct to assume 3 times the discharges. At a rough estimate I shall say 200 or a total of 23,000 miles, and then the negative plates would still have a considerable life. Assume the vehicle is used 20 miles per day for 300 days, or 6,000 miles per year, we have a life of 4 years, which is more than has generally been accredited to storage batteries. At the rate in the table the capacity is 6.8 ampere hours per pound. A battery of another make has a slightly higher capacity or about what a "promised" battery will give, but its life is as yet an unknown quantity.

Some of these mileages can be slightly increased by extremely fine bearings, narrow bodies and motors of more than ordinary efficiency. At the present time manufacturers guarantee 40 miles per charge over good city roads, and, of course, a decrease under less favorable conditions. In order to obtain this for different weights of vehicles the data herewith presented will be of interest and serve as a guide.

There are cases of extremely high mileage records made with vehicles of these weights in this country and abroad. In most cases, however, the vehicle was well loaded with battery, the speed was low, tests were conducted on the level with few stops, and other conditions were ideal, such as new battery, well adjusted bearings and tires well blown up. The results shown herein, however, are average conditions and such as will be reliable throughout the life of the battery.

In regard to possibilities for greater capacities in batteries much can be said. One of the reasons that only about one-fourth of the theoretical capacity of lead batteries can be obtained is that the active material used in discharge represents only a very thin surface layer of the total, due to the fact that as it discharges the produce becomes a non-conductor and obstructs the flow of the current. In order to increase the capacity it will be necessary so to distribute the active material on light conducting supports that all of it really enters into the discharge, or it will be necessary to use other materials which have a higher theoretical capacity and with our present mechanical construction get the same proportion of the theoretical capacity. By increasing this capacity and still having the same mechanical stability as in the lead cell we will get a lower rate of depreciation, for life is measured by number of discharges multiplied by mileage per charge. This is one reason why new batteries made of other materials than lead should prove interesting, provided, however, their theoretical capacity is higher.

[The figures for amperes, watts and watt-hours in the tables have been calculated on the basis of the "theoretical" mileage only.—Editor.]

CORRESPONDENCE.

A Broomstick Repair.

Editor THE AUTOMOBILE:

Sir: A few days ago I went with a friend to Long Island City, to bring back a homemade gasoline runabout which had lately been completed and was then in the shop of the firm of whom the engine had been purchased. The engine, when put into the car, would not show any power, and all hands were at a loss to know the reason. We got to the shop about 3 o'clock, where we were told that the ignition timing had been put all awry by the substitution of a magnetic vibrator for the single spark contact breaker provided with the engine. This had been put right, and the engine was now ready to run. It was a single cylinder motor, carried under a bonnet in front, and driving by belt an Upton speed changing gear under the seat. The water tank was cylindrical and mounted a little above the motor, which it cooled by gravity circulation. The batteries and spark coil were attached by iron straps to the frame in the right hand corner forward of the motor, and a fair-sized bonnet covered the whole.

We set out, my friend driving, and at first, for a home-made affair that had not been driven 30 miles, the car did very well. The ignition lead would not stay where it was put, however, and finally a nut came off from a screw in the connections from the brush-holding plate back to the handle on the steering column, and we had to stop to find a new screw. The mixture did not seem quite right, for misfires were frequent, and we tried to improve the carbureter adjustment, with the result of making things worse than before. Finally the car would not take even a 3 per cent. grade in the high gear, and we crawled along on the low to the top of a gradual ascent half way to our destination. From that point it was either level or slightly down grade, and we spun along beautifully in the gathering darkness, reaching Jamaica and a hotel shed about 7 o'clock, just in time to save us from getting into trouble on account of having no lights.

Apparently nothing was wrong but the mixture, and we separated, promising ourselves to get to Jamaica in the morning, put the carbureter right, and take a spin out to Mineola before riding into Brooklyn. When we inspected the machine by daylight, however, we hardly knew whether to grieve over the obvious fact that our trip must be postponed or to thank a merciful Providence for our narrow escape from a worse disaster. The iron straps holding the battery box and spark coil had been bent cold, and had broken in two or three places, leaving the electrical outfit dangling by a couple of wires and one end of a strap. Examining further, I found that the supports of the water tank, which were composed of strap iron bent into A shape, had bent and settled slightly under the

weight of the tank, allowing the bottom of the latter to rest on a transverse iron bar of the frame. The bar had dented the bottom of the tank, and already a small leak had started.

My friend took the straps from the battery box to a local blacksmith, while I, after profound study over the problem of the tank, the supports of which were too stiff to be bent up by any tools at hand, concluded that a make-shift repair was the only thing possible. I found an old broom, the stick of which I cut to convenient length, and found that one end could be laid on the front cross sill, and the other end wired to the bottom of the side sill, the middle of the stick coming under the strap support at one end of the tank. I whittled the front end to suit the sill, and with a screw and some light telegraph wire I secured it firmly. The back end only needed to be drawn up close, the stick bearing with considerable pressure against the bottom of the tank. Another stick was whittled to act as a prop between the strap support at the other end and a convenient bracket ten inches below. It also was wired firmly in position, and by means of the two sticks the tank was lifted perhaps one-eighth of an inch from the bar on which it had rested. Meanwhile new straps had been forged for the battery box, the blacksmith, like a gentleman, contenting himself with charging 50 cents for the job. They were put in place, the water tank refilled, and things made ready for a run. By this time it was half-past twelve, just three hours later than we had expected to start, and, as it looked like rain, we started for Brooklyn without waiting for lunch.

The trouble with the mixture was determined by the simple process of taking out the inlet valve to look for trouble there. We

found it wet with liquid gasoline, which evaporated in a hurry when it felt the air. We reduced our gasoline feed more than half, and had no more trouble on that score.

Nevertheless, a mile or two out of Jamaica the same persistent misfires were troubling us again. They were not due to the mixture, nor to too much oil, as the nearly clean condition of the spark plug proved. We were on the point of giving it up when it struck me that the battery was depleted. Being composed of dry cells, it recuperated rapidly when we stopped for a few minutes to look for the cause of trouble, and when we started again it gave current enough for steady running for perhaps five minutes, after which it weakened again. We took out the plug for perhaps the tenth time, and I bent the sparking points a little closer together. It stopped the trouble, sure enough, and immediately afterward the little motor astonished us by taking us up a 6 per cent. grade on the high gear. We reached the stable without further trouble and with feelings divided between humility for our narrow escape and elation over our triumphal return. I don't know what the machinists thought of our broomstick repair, but if it becomes necessary to take the machine out before new tank supports are made, it will run till the broomstick breaks.

"IXION."

Exports from New York.

Exports of motor vehicles and parts from the port of New York for the week ended October 4 were as follows: Argentine Republic, 1 pkg. motor cycle, \$135; British West Indies, 1 pkg. motor vehicle, \$800; Copenhagen, 3 pkgs. motor vehicles, \$1,150; Kier, 1 pkg. motor cycle, \$250; London, 3 pkgs. motor vehicles, \$400; Mexico, 6 pkgs. motor vehicles, \$1,248.

ELECTRIC VEHICLE PERFORMANCE.

Numerical tables accompanying article by Frederick J. Newman. See Page 8.

Table A—Speed 15 Miles per Hour.

Class.	Total Weight.	Weight of Load.	Weight of Battery.	Watt hrs. per 1,000 lb. mile.	Watts on Discharge.	Ampere per lb. of Battery.	Ampere hrs. per pound of Battery.	Theoretical Mileage.	Service Miles.	Volts with 40-lb. Cells.
1	1,000	—300—	320	81.5	1,220	1.75	4	34.5	26	18
2	1,500		600	71	1,000	1.33	4.25	47.5	35.5	30
3	2,000		850	64	1,080	1.18	4.5	60	45	42
4	2,500		1,100	60.5	2,270	1.08	4.7	68	51	56
5	3,000		1,350	58	2,600	.96	4.8	75	56	68

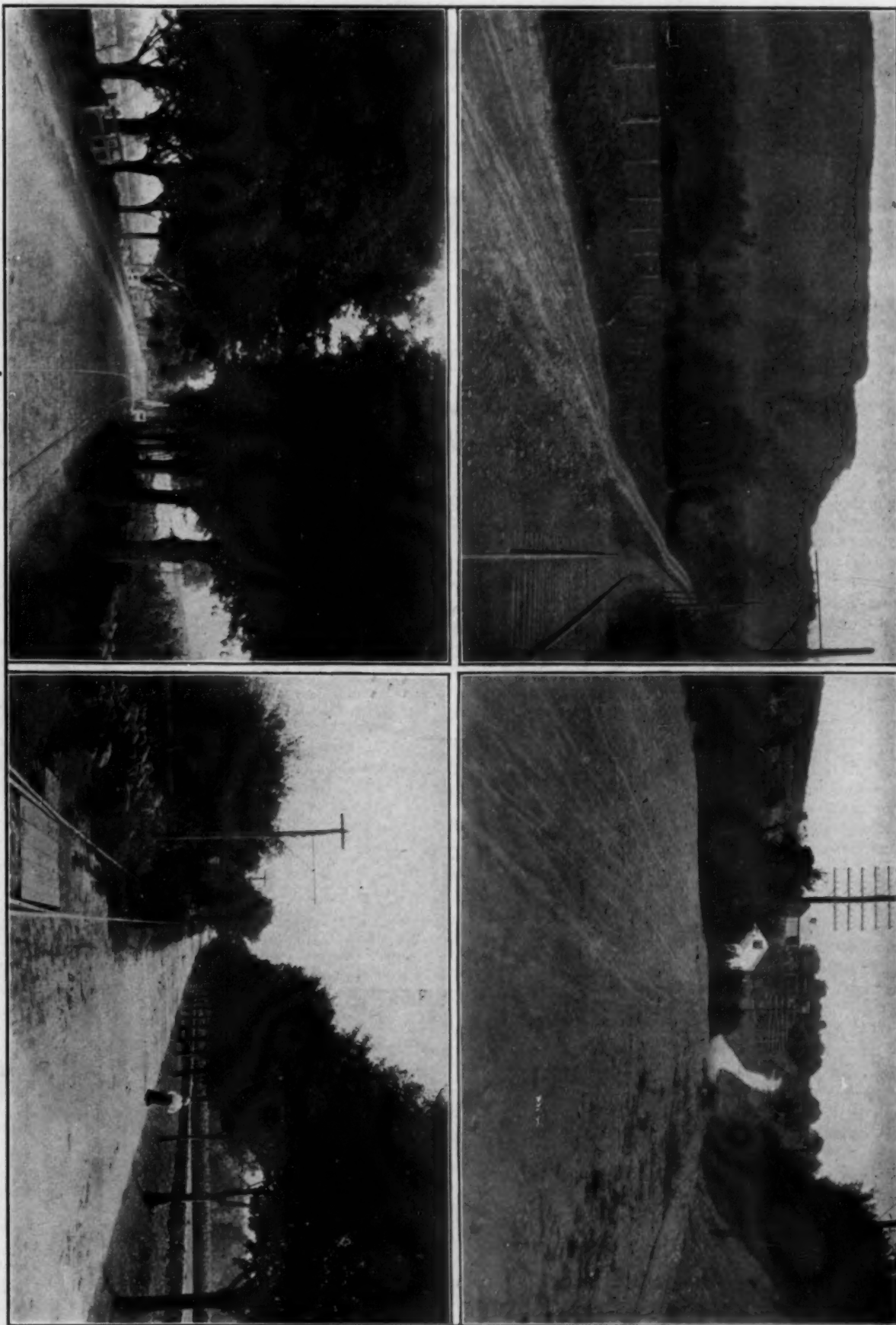
Table B—11 Miles per Hour.

1	1,000	—300—	320	65	715	1.025	4.6	49.5	37	18
2	1,500		600	56	912	.76	5.3	60	32	30
3	2,000		850	51	1,122	.66	5.6	93	70	42
4	2,500		1,100	48.5	1,340	.61	5.75	104	78	56
5	3,000		1,350	47	1,520	.575	5.87	113	85	68

Table C—8 Miles per Hour.

1	1,000	—300—	320	55	440	.64	5.75	73	54	18
2	1,500		600	47.5	570	.475	6.25	105	79	30
3	2,000		850	43.5	685	.41	6.55	128	96	42
4	2,500		1,100	41.25	825	.375	6.7	143	107	56
5	3,000		1,350	40	960	.355	6.8	153	115	68

NOTE.—Theoretical mileage represents mileage on level asphalt with no stops until discharged. Service mileage in cities like Pittsburg and in every-day service.



Near Meriden, Conn., Meriden Mountain in Background.

The Maples, Brookfield Mass.

Road on the Route near South Framingham, Mass.

Old Boston Turnpike, Near Worcester, Mass.

SNAP-SHOTS OF CHARACTERISTIC BITS OF SCENERY AND ROADS ON THE ROUTE OF THE NEW YORK-BOSTON RELIABILITY CONTEST.—(See Page 13.)

THE MARINE MOTOR.

ISHAM COMPANY REORGANIZATION

Removal to New Site and Enlargement of Plant—
Other Builders Report Activity.

Special Correspondence.

NEW LONDON, CONN., Oct. 6.—After months devoted to reorganization upon a firm basis, financially and mechanically, the F. N. Isham Co., launch and engine builder, of Mystic, announces its removal to a site south of the Naval Station on the Thames River, opposite New London. Mr. Isham, who is general manager of the new company and a builder of launches remarkable for achievement, notably the *Spray*, whose trip to Florida and return was described in these pages recently, states that work has already begun on the buildings at the new site and it is expected that the concern will be ready, fully equipped before January 1. The main building, which will be devoted to the construction of the Isham motor and general machine work, will be 80 feet square, with an addition 24 by 80 feet, to be the machine shop. A second building, 40 by 60 feet, will be devoted to launch and small boat building. From the two main buildings marine railways will run to the shore for hauling out and launching craft under repair or construction. A new wharf, 100 feet long, will extend into the Thames to 22 feet of water. Mr. Isham says it is the intention of the company to build yachts of all classes and also gasoline and steam engines. The company anticipates having the finest plant situated between New York and Boston.

ENGINE BUILDERS EXTENDING PLANT.

James W. Lathrop, of Mystic, manufacturer of gasoline marine engines, has had an addition built to his plant to be devoted to storage room for machine parts and a shipping department. In the stock room all attachments to Lathrop engines will be kept ready for delivery on order, and the engine shipments will be made from the new addition, the department being moved from the main building. The Lathrop engines, which are low cost two-cycle machines, have had a wide sale in the United States and foreign countries.

NEW WORK AT BRIDGEPORT.

Business at Greene Brothers' shipyard in Bridgeport has taken a decided boom through contracts secured for small craft. Besides estimating on the construction of a five-masted and a three-masted schooner, the firm has in hand a 53-foot modern type gasoline oyster boat for A. Sutter, of Canarsie, N. Y. The keel and ribs are already in place. In the boat shed are two more gasoline-power oyster boats in course of construction. These are 40 feet long and are ordered by W. H. Cornwell, of Baldwins, L. I., and C. E. Bourne & Son, of Providence, R. I. The *Frank C. Pettis*, a 50-foot gasoline power boat, built for Robert Pettis, of Providence, R. I., has

just been delivered. The *Le Roy*, belonging to H. W. Schmeelk & Co., of Canarsie, N. Y., has been remodeled and rebuilt and is ready for her owners. The *Freddie W. Decker*, belonging to Capt. Peter Decker, of South Norwalk, which was burned off the latter port recently, is being rebuilt. At the time of the fire she was a steamer, but when completed will be propelled by gasoline engine. Minor contracts are being carried out and the yard is the scene of considerable activity.

Notes from New London.

NEW LONDON, CONN., Oct. 6.—Frederic S. Nock, the well-known designer of speed launches, has purchased the shipyard, marine railways, buildings, etc., formerly owned and controlled by George N. Saunders, at East Greenwich, R. I. Mr. Nock has a number of yachts hauled out at the yard. No boat building will be done at present, as considerable repair work is at hand. A specialty will be made of the sale and installation of the Buffalo marine motor. Mr. Nock will continue his marine designing work at West Mystic as usual for some time to come. A. W. George, of Mystic, has purchased through the agency of Frederic S. Nock the yawl *Anita*, 33 ft. over all, 24 ft. on waterline, 10-ft. breadth and 3-ft. 6-in. draught. She is already arranged for auxiliary power. Her accommodations are excellent for a boat of her size, her cabin being arranged with toilet, etc., and there is nearly 6 ft. headroom.

J. W. Lathrop has supplied with motors the sloop yacht *Viola*, owned by C. N. Wayland, of New York, a summer resident of Stonington, and the pleasure launch *Dido*, owned by J. W. Stivers, of Stonington. A motor is ready to install in a 20-ft. launch building by Capt. F. W. Schofield, of Stonington, which is now receiving finishing touches.

More Launches for Florida.

NEW HAVEN, CONN., Oct. 4.—In addition to the fleet of motor craft previously

The 30-foot launch *Skylark*, owned by Charles L. Newton, of the Thimble Islands, is to make the run by the inside route, leaving New York by Oct. 15, at the latest, so as to get well into southern waters before the Fall gales and the cold weather are due. The *Skylark* was new last year and has an 8 h. p. gasoline engine.

Eugene P. McKenna, of West Haven, is turning his sloop *Spray* into an auxiliary boat, preparatory to making a trip in her to Florida. She is a large and able sea going craft, and will be ready for the run in about three weeks. Captain Edward Bradley, of New Haven, an experienced sailing master, will take her south by the inside route. Mr. McKenna will have a party of his friends along, and the *Spray* will spend much of the winter at Palatka, Fla., returning next Spring.

Power in the Lobster Fishery.

In the accompanying photograph the outlines of the motor lobster boat *Crustacean*, of Fisher's Island, N. Y., are shown. This type of craft has revolutionized the lobster fishery, by making it possible for the fisherman to set his traps in deeper water and in fiercer tides than in the old days of hauling the traps from sail craft by hand. Many of the lobster motor boats are larger than the *Crustacean*, are of the auxiliary type, and have fine cabin accommodations. The *Crustacean* has a three h.p. Globe motor, and she is fitted with a hand winch, as will be seen, for the purpose of hauling traps, this winch being connected with the motor also. In deep water, and heavy hauling, gasoline makes the lobster-fisherman's life a much happier one than it was in the days before the motor boat was discovered, and it is also possible for him to attend to a much larger number of traps with the aid of the motor, both in propelling his boat and in hauling his gear than it was possible to do with the sailboat. There is a large fleet of these craft at Noank, Conn., at Fisher's Island, Greenport, L. I., and in



LOBSTER MOTOR BOAT CRUSTACEAN.

named as bound from this city and State to Florida, this Fall, two others have been reported this week.

Narragansett Bay. Many of the motors have also been put into the dory fishing fleet along the shores of Massachusetts.

WASHINGTON PARADE OF DECORATED AUTOMOBILES.

MORE THAN 100 VEHICLES IN LINE

Procession Moves From Scott Circle to Capitol and Back on Pennsylvania Avenue and Is Reviewed in White House Ellipse—Prizes Awarded for Prettiest and Most Novel Decorations.

Special Correspondence.

WASHINGTON, D. C., Oct. 6.—The series of parades incident to the thirty-sixth annual encampment of the Grand Army of the Republic, now being held in this city, was inaugurated this morning with an automobile floral parade, which proved one of the most interesting and spectacular events ever witnessed in Washington. More than 100 vehicles were in line, and as the parade passed through the principal streets in the downtown section, the participants were cheered by thousands of people who thronged both sides of all the streets. It is estimated that nearly 200,000 persons viewed the parade. The outpouring of motor vehicles was not only a revelation to Washingtonians, who had hitherto had but a faint idea of the large number in daily use in the city, but it also afforded an object lesson to the multitude of visitors from all parts of the country of the wonderful development that has taken place in automobile construction within the last two or three years.

COURSE OF THE PARADE.

The weather conditions were ideal, the rain of Saturday and Sunday giving way this morning to a flood of warmth and sunshine. It was a splendid beginning of a week of pleasure and entertainment.

As early as 9 o'clock motorists began to congregate at Scott Circle, the starting point. An hour later the signal to start was given by Robert B. Brown, first vice-president of the automobile committee. Headed by a squad of policemen on horseback, and flanked on each side by bicycle policemen, the head of the column swung into Massachusetts Avenue, proceeded east to Fourteenth Street, thence to F Street and down the latter thoroughfare to Tenth Street, where the parade turned into Pennsylvania Avenue. It proceeded eastward on the south side of the avenue to Peace Monument, at the foot of the Capitol building, then doubled and returned up Pennsylvania Avenue on the north side, passing through almost a solid wall of people. Wire ropes were stretched on both sides of the avenue from the Treasury Department to the Capitol, a distance of a mile. Swinging around the Treasury Building, the parade passed the White House, in front of which the President's reviewing stand had been erected, and thence to the ellipse in the rear of the Executive Mansion, where the prizes were awarded.

FIRST VEHICLE IN LINE

The first vehicle in line was a Columbia electric Stanhope, in which were seated

Vice-Chairman Brown and General Torrence, Commander-in-Chief of the Grand Army of the Republic. Then came Second Vice-Chairman Hensey and his sister, in an Oldsmobile. They in turn were followed by Edwin H. Duff, secretary of the committee, with his wife, also in an Oldsmobile. Immediately behind the officers was a large electric omnibus carrying a section of Haley's Band, which played throughout the progress of the parade. Then followed the decorated automobiles, after which came those that were not decorated.

President Roosevelt had intended to review the parade from his stand in front of the White House, but the injury to his leg has been causing him considerable trouble of late, especially since the excitement incident to the coal conference last week, and his doctors thought it best for him to forego the pleasure of seeing the novel pageant. In the absence of the President, the review took place on the White House ellipse, the judges being General Torrence and the officers of the automobile committee, several of whom are members of the National Capital Automobile Club. The committee decided that the first prize was won by Col. C. E. Wood, who was accompanied by W. F. Gude, president of the Business Men's Association. Their vehicle was a Waverley electric, which was a mass of roses and other flowers. Nearly two thousand roses, carnations and chrysanthemums, and many yards of pink ribbon and smilax were used in decorating the vehicle, and it was indeed a work of art. The entire front was covered with American beauty roses, while the hubs were swathed in bride's roses, and the rest of the machine in carnations and chrysanthemums.

The second prize was awarded to Mrs. G. W. Strong, whose Oldsmobile resembled a fairy bower. The machine was covered with American beauty roses, with wide bands of pink ribbon flowing in all directions and forming a canopy over the driver. The wheels and body were wrapped in pink ribbon and then covered with pink flowers, the color scheme harmonizing very prettily with the costume of the occupant of the vehicle.

AMERICAN EAGLE WINS

The novelty first prize was easily won by Dr. F. H. Waite, who was accompanied by Dr. Hasselback. Their machine was a Locomobile, and was a representation of an American eagle. In front was arranged a large eagle head, from the nostrils of which steam issued. Spreading wings were arranged along each side of the vehicle and an eagle's tail, mammoth in its proportions, projected behind. Dr. Waite was dressed to represent Uncle Sam, and his companion was in fancy costume. A small boy in a uniform made out of an American flag, was perched on the eagle's neck.

The novelty second prize was given to A. E. Offutt, who was accompanied by Dr. DeWesse, in a Waverley electric vehicle.

On the front of this machine were the letters "G. A. R.," and springing from everywhere about the vehicle were bunches of wheat and other grain. The pastoral appearance of Mr. Offutt's vehicle did not fail to elicit much applause from the country folk who witnessed the parade.

Another novelty decoration of merit was the Oldsmobile driven by Mrs. Dr. Hickling, who is a daughter of Governor Stone of Pennsylvania. The decorative scheme was one apropos of the season. Autumn flowers, such as golden rod, were massed about the carriage and formed a canopy over her head.

The prizes consist of silver loving cups suitably inscribed. They have been on exhibition for several days and have attracted much attention on account of their pleasing design.

Much of the success of the parade is due to the indefatigable efforts of Robert B. Brown, vice-chairman of the committee. Senator Thurston, of Nebraska, was selected to head the committee, but he was unexpectedly called to Honolulu. Associated with Mr. Brown on the committee were many of the best-known motorists of the city, most of whom are members of the National Capital Automobile Club.

WANT ONE GENERAL LAW.

Automobile Club of Philadelphia Starts Movement for Revised Road Ordinance.

Special Correspondence.

PHILADELPHIA, Pa., Oct. 6.—A combined movement is shortly to be made by local automobilists, wheelmen and drivers, to formulate a general ordinance governing the use of all vehicles of whatever kind in this city, with the view of having it take the place of all existing ordinances on the subject. The movement was inaugurated by the Board of Governors of the Automobile Club of Philadelphia, which instructed its president, Henry G. Morris, to request the co-operation of the wheelmen and drivers. The Century Wheelmen, as the most prominent cycling organization, the Road Drivers' Association, for the horsemen, and the presidents of the steam and electric roads, will each be asked to appoint two representatives to meet with the delegates of the automobile club—President Morris and Vice-President John S. Muckle—at some time and place to be announced later.

As a result of a conference at Detroit between Chairman Stewart, of the American Automobile Association, and R. Harry Croninger and George Collister, respectively chairmen of the racing committees of the Chicago and Cleveland Automobile Clubs, it was agreed that these two organizations should have representatives on the racing board of the A. A. A., who will attend the annual meeting of the board in New York in November when the racing rules will be revised and the suggestions and recommendations of the western club representatives will be considered.



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THE MOTORIST AND THE LAW.

As the number of private motor vehicles increases, those who indulge in this form of recreation will do well to know clearly not only what their obligations are, but also their rights. The intelligent motorist will always bear in mind when he has ascertained his rights that things lawful for him may not always be expedient; because whether an accident be occasioned by recklessness in clear violation of an ordinance, or merely by lack of judgment or a reckless insistence upon technical rights, the result in restrictive ordinances may be the same. The wide range of travel afforded by the motor makes it important that there should be, as to the motorist, some uniformity of local regulations in order that, as he travels from point to point, he may not be confronted with various speed ordinances or by unfair local license regulations. But the enactment of such ordinances is stimulated, particularly in small localities, just as much by accidents occasioned by lack of judgment as by a breach of the law. It is, further, true that however proudly conscious one may be that he has acted wholly within his rights, that fact alone does not prevent his being afforded a day in court by some excited citizen, which may, if he is a pilgrim and a stranger in the precise locality of his arrest, involve also a night in the lockup.

Any movement, therefore, in the direction of presenting to the legislatures of contiguous States, contemporaneously, a uniform State law with regard to the licensing of vehicles of this sort, while invading the liberty, or we might say license of a comparative few, will safe-guard the rights and privileges of the large majority of those engaged in this sport.

Knowledge of local speed ordinances is, however, one of the simplest questions in which the motorist is interested. It becomes vital only when the bicycle or mounted policeman is in hot pursuit, and, it may be observed with some cynicism, that to those who can afford this form of pleasure, the grade of fines is hardly on a scale to act as a deterrent, for, after an exhilarating dash over a fine road at a speed of from twenty to thirty miles an hour with the machinery in excellent order and the power of the vehicle under the operator's perfect control, the rider feels that the experience has been worth the fine. *Le jeu vaut bien la chandelle.*

But look at the matter from another standpoint. Assume that in this dash, which may be, by virtue of local laws, illegal, someone is run over and killed. The motorist is then confronted with the possibility of just such a case as lately occurred in New Jersey, where Mr. Justice Dixon charged the grand jury in substance:

If in this case, it appeared that driving the automobile at such speed was the probable cause of the man's death, then the guilty party should be indicted for manslaughter. . . . We all have a right to the highway in our vehicles and on foot, just the same as we did before these machines came upon the roads. Everybody who uses the highway so as to endanger the people in the common use of it is guilty of creating a common nuisance. It is not a question of municipal ordinance; it is the law of the State. It does not depend on a statute; it is common law, which we inherit from our ancestors. Everybody who so conducts himself as to endanger persons who are in the exercise of the common right is guilty of creating a common nuisance, and should be indicted for the same.

There can be no question that the Court was right in this statement of the general law. Equally there can be no question that no intelligent motorist desires to have public opinion assume that his attitude is in defiance of the law, but that the motorist desires to keep within the law and that he is not the murderous brute caricatured in the occasionally comic press.

There is still another view of the case, namely as to the effect of accidents, occurring in a motor vehicle driven at excessive speed, upon the rights of the occupants injured therein under accident insurance policies. It is not to be assumed for a moment that the accident insurance companies will pay without protest or without litigation, claims arising under such circumstances. It might even become a question of practical and legal importance, under suicide clauses in life insurance policies, whether against the assured who recklessly exposes himself to death as—if the reports are all exact—was the case in the Fair accident near Paris, the companies cannot successfully defeat a claim under the policy.

A suit for personal injuries, however, appears the probable instrumentality by which the reckless motorist can best be kept within those bounds of prudence and common sense which will safe-guard not only the general public, but the large majority of reasonable and common sense au-

tomobilists. It is true that in a case of this character, the court would probably charge that the motorist had rights in the public thoroughfare equal to those of anyone else lawfully using the highway and that the plaintiff would have to establish affirmatively the negligence of the driver, but at this stage of the development of this new use of public thoroughfares, particularly in the crowded streets of large cities, the sympathy of the average jury might reasonably be counted upon to find affirmatively such negligence upon the slightest encouragement in the average case. Furious driving by motorists would become prohibitive if a verdict for \$2,500 or \$5,000 were to accompany or supplement the ordinary five or ten dollar fine. It is in the interests of the recreation at large that the reckless driver be discouraged. It is also to the interest of motorists at large that any law suit involving the general principle be adequately defended so that the precedent of adjudicated cases may not involve a loose statement of the law, nor justify a series of large verdicts on improper premises.

The work of the Highway Alliance, as the most representative body, might reasonably be said, therefore, to include an attempt to secure uniformity of State regulations in contiguous States and arrange perhaps at some reasonable preliminary expenditure, for expert safe-guarding of the rights of the motorist-public in what may become the leading cases in automobile law in negligence suits of this character.

If the automobile clubs of every large city were themselves actively to co-operate in the suppression of cases of reckless and negligent driving, it would go far to secure from the average jury a more dispassionate consideration of the question of negligence on the facts in cases of this character.

An ounce of legal advice before starting is worth a pound of professional exposition after one is a defendant.

DEVELOPMENT OF FUEL ALCOHOL.

The abundance and comparative cheapness of both solid and liquid fuel in this country has heretofore induced inventors to consider the problem of the convenient and economic use of a few fuels such as coal, coke, and the petroleum products, rather than the utilization of entirely new substances. The present condition of the coal market, to say nothing of the advance in price of gasoline, suggests the importance of a broader and more searching inquiry in the whole question of fuel for power, light and heat. Much is yet to be done with the already familiar agents, gasoline and kerosene, both for direct combustion in furnaces and for use in the explosion motor, but beyond this an entirely new field is now opening.

The movement inaugurated in France and Germany, within a very recent period, for the production of cheap alcohol and its utilization as fuel, is attracting the atten-

tion of other nations, especially those in which the ordinary fuels are expensive, or agricultural products are unusually abundant. There is evidence of a growing demand for methods and machinery for the production of cheap fuel alcohol and for machines of all kinds, such as motor vehicles, agricultural and wood-working machines, and also for lighting and heating apparatus, which can use alcohol as fuel.

While the conditions in this country are not as yet favorable to this new fuel, and the necessity for its use may never arise, the movement is of importance to American manufacturers. Any demands for alcohol machinery from South America, South Africa, or other countries, must inevitably go to France or Germany at the present time. There is no reason why American inventors should not take a leading position in this new industry, finding their reward in an extensive export trade and possibly in the end in a home market as well.

COMING A. C. A. ELECTION.

Nominations for Presidency Declined by Messrs.
A. R. Shattuck and W. E. Scarritt.

The facts that the annual election of officers of the Automobile Club of America comes on November 17, and that President A. R. Shattuck has formally announced that he will decline a renomination, have precipitated a great deal of discussion over possible candidates, and adds unusual interest to the forthcoming election. In explanation of his decision, Mr. Shattuck said: "I have been at the head of the club for two years, and I think it is time to give some one else a show. The club is in an exceedingly prosperous condition, with more than 300 members, and is firmly established, and I am quite satisfied to retire."

At a meeting of the board of governors of the club held on September 29, Dave H. Morris, W. J. Stewart and J. M. Hill were appointed on a nominating committee to report a regular ticket.

WINTROP E. SCARRITT DECLINES.

Following the positive announcement of President Shattuck, Winthrop E. Scarritt was urged by many as his successor in office, but when the matter was broached to Mr. Scarritt, he promptly declined the honor, holding that two presidencies in similar organizations were sufficient. Besides being president of the American Automobile Association, he is president of the Automobile Club of New Jersey. Moreover, he felt sure, he said, that a convincing number of the members of the A. C. A. desire that Mr. Shattuck accept the office again. A canvass among the members by J. M. Hill showed a general demand for Mr. Shattuck if Mr. Scarritt declined. Other persons suggested as candidates are George F. Chamberlin, first acting president of the club; Gen. George Moore Smith and Edwin Gould, present vice-presidents; Harlan W. Whipple, W. K. Vanderbilt, Jr., Albert C. Bostwick and George R. B'dwell.

NEW ACTIVE MEMBERS ADMITTED.

At the last meeting of the board of governors the following new members were admitted to the active list: J. De Forest Danielson, Boston; L. P. Mooers, Cleveland; George McFadden, Philadelphia; E. C. Hawley, Babylon, L. I.; John M. Shaw, Madison, N. J.; Alfred L. Simpson, New York; S. L. Schoonmacker, Plainfield, N. J.; C. E. Knoblauch, New York, and John Hickey, Mount Vernon, N. Y.

HEAVY TRUCK TRIALS NEXT SPRING.

Owing to the lateness of the season and the labor entailed by the reliability run, the board decided to postpone until spring the promotion of an endurance test for heavy trucks, as proposed by Ralph Morgan, of Worcester, and seconded by a number of other manufacturers. It is expected that the plans and details for such a test will be settled at the time of the New York automobile show in January. The recent action of the officers of the club in notifying the town officials along the route of a proposed attempt by an individual motorist to lower the record from Atlantic City to New York and thereby preventing such a useless violation of the laws, has met with widespread commendation. Although it has been denied that such a speed test was to be made, and the club has been criticised by some for hasty action, it has been learned that the attempt was so earnestly contemplated that an automobilist in New York was asked to hold the money that had been wagered on the result. But whether the action prevented this particular trial or not, it will have the good effect of deterring others from attempting such illegal runs, which have been unfortunately common heretofore.

PROTEST AGAINST EXCESSIVE SPRINKLING.

Last week the club entered a formal protest with Commissioner Woodbury, of the New York street cleaning department, regarding the excessive wetting of the asphalt paving on Fifth Avenue by the sprinkling carts, which makes the street dangerous for automobile use. Regarding the protest, Commissioner Woodbury stated that the sprinkling carts will be discontinued after the middle of this month and instead the asphalt will be washed thoroughly each night by flushing with a hose attached to the fire plugs.

At the Republican State Convention, held in Saratoga, N. Y., Sept. 24, the platform presented contains a good roads plank, which shows that others than automobilists are awakening to the very great importance of these public means of communication.

RELIABILITY CONTEST ENTRIES.

Additional Vehicles Entered in New York-Boston Run-Weather Conditions.

The continued bad weather of last week brought dire apprehensions to all motorists who remember the New York-Buffalo run of last year, as it promised a full week of rain and bad roads. After a particularly disagreeable Sunday, with a sullen easterly rain, the wind went to the west at night, bringing clear, bright weather on Monday and Tuesday. With the wind between S. W. and N. W., as it promises to hold at the time of going to press, good weather may be counted on, with at least a partial drying up of the roads.

The arrangements for the storing of cars, fuel supply, hotels, etc., have all been completed by Secretary Butler, and it now rests with the various entrants to make the run a success. Up to Tuesday night the entries numbered 79, the additions to the list published last week being given herewith. The weighing of the cars was begun on Tuesday on the platform scales at Fifty-seventh Street and First Avenue, but nearly all the cars waited until Wednesday.

The total number of entries for last year's run was eighty-nine, the starters numbering seventy-eight, of which forty-two were officially recorded at every control up to the termination of the run at Rochester. Of these, six were motor bicycles, for which no class is provided this year.

The course of the present run is very different from that of last year, while the total distance is about the same, it was then straightaway, while now it is out and back, the return being entirely over the outward course. The road along the shores of the Sound, up the Connecticut Valley and across Massachusetts, is quite as picturesque and interesting as that up the Hudson and through the Mohawk Valley, and with an average limit of 14 miles to the speed, coupled with the absence of Mr. Bishop as pacemaker, there will be more opportunities for enjoying the beauties of nature.

It is probable that with the best of weather conditions some pretty bad pieces of road will be met, but nothing to approach the floating morasses of Montezuma Swamp. There are some steep grades, but no ascent of the length and grade combined of Nelson Hill. For the greater part of the distance the roads are distinctly better than those between New York and Buffalo, and in many places they are very good. The pictures on page 11 show some characteristic bits of road and scenery. The list of additional entries is as follows:

A. C. A. 500-MILE RELIABILITY CONTEST. LATE ENTRIES.						
No.	Class.	M.P.	Maker.	Entered by	H.P.	Wgt.
73	B	Steam	Foster Automobile Mfg. Co.,	Dr. M. A. Carman.....	4	1350
74	B	Gasoline	E. R. Thomas Motor Co.,	Mechaley Bros.....	6	995
75	B	Gasoline	Thos. B. Jeffery & Co.,	Mechaley Bros.....	4 1-2	1100
76	C	Gasoline	Fournier-Searchmont Co.,	John Wanamaker.....	8	2100
77	B	Gasoline	Thomas B. Jeffery & Co.,	Columbus Auto. Exchange.....	4	1200
78	B	Gasoline	A. Darracq & Cie, Col.	W. P. Harlow.....	16	1700
79	A	Gasoline	Olds Motor Works, H. B.	Shattuck & Son.....	4	800

NEWS OF THE CLUBS.

WORCESTER CLUB ORGANIZED.

Constitution Is Adopted and Officers Elected—Fifty Membership Applications Expected.

Special Correspondence.

WORCESTER, Mass., Oct. 6.—Fifteen enthusiastic motorists of Worcester attended a meeting in the office of Geo. H. Cutting & Co. last week and completed the organization of the Worcester Automobile Club. A constitution was adopted, officers elected, and plans made to place the Worcester club among the leading organizations of New England.

The officers are as follows: President, Geo. H. Cutting; vice-president, Dr. Roy M. Garfield; secretary, H. L. Shiland; treasurer, Jno. W. Harrington; board of governors, Fred. S. Taylor, Alexander Bowler, Thomas J. Toner, B. A. Robinson, F. H. Goddard, O. N. Lavelle.

Another meeting will be held to-night at which it is expected at least fifty applications for membership will be received. The officers hope to place at least 100 names on the membership roll before spring, and from indications it seems as though they would be successful.

SECOND ANNUAL DINNER.

Automobile Club of California Affair Attended by San Francisco Officials.

Special Correspondence.

SAN FRANCISCO, CAL., Sept. 30.—Nearly one hundred motorists and their friends sat down to the second annual dinner of the Automobile Club of California in the Cliff House recently. Mayor Schmitz and Mrs. Schmitz and a group of supervisors and other municipal officers, including several park commissioners, the chief of police and a police commissioner, occupied seats of honor with President F. A. Hyde, of the club. Replying to opening after-dinner remarks by President Hyde, acting as toastmaster, Mayor Schmitz said, in part:

"I believe there is much justice in the requests of our automobilists and that they should have the right to travel the park driveways. Never before to-night have I so clearly realized how much our streets needed improvement. As I rode out here with Mr. Ford in his Winton racer, rising three feet off my seat at not very distant intervals, and learned that we were going at the slow speed of only eight miles an hour instead of forty, as I had supposed, I made up my mind to do all I could in future to help on the crusade of the Cycle Board of Trade and the Automobile Club of California for good streets."

Friendly speeches were also made by Police Commissioner Hutton, Chief of Police Wittman and others. Park Commissioner McDonald said that at all times he had been in favor of automobiles having equal rights in the park with other

vehicles. Between the speeches there were songs by the Wendell quartet, and by lady soloists.

The president of the club announced that through the offices of Mayor Schmitz permission was secured to return to the city along the Ocean Boulevard, through the South Drive of the park, which has never before been permitted.

TOLEDO CLUB ORGANIZED.

Constitution and By-Laws Adopted, Officers Elected and Committees Appointed—

Special Correspondence.

TOLEDO, OHIO, Oct. 4.—The Toledo Automobile Club, which was launched on September 14, held its second meeting last Saturday and effected permanent organization. The report of the committee on by-laws was read and their constitution and by-laws adopted. The annual dues were fixed at \$10, while to associate members, that is, members residing beyond a radius of 50 miles from Toledo, dues were made \$5 a year.

Officers were elected as follows: President, Dr. Louis A. Leffing, vice-president, Dr. Charles P. Wagar; secretary and treasurer, George E. Palmer, Jr.; trustees, Frank Hake, Ezra E. Kirk, George E. Palmer, Jr., J. N. Bick, George R. Ford, J. M. Foutz, and Dr. Chas. P. Wagar. The term of office of those elected is six months or until April 1, 1903, when the next election of officers will be held. The following committees were also appointed: Membership, C. M. Hall, chairman; V. L. Faardeau, George Troutt, J. N. Bick and J. M. Foutz; Auditing, Grant Williams, F. J. Landgraf, Jr., and Frank Hake; Exhibitions, runs and contests, Guy R. Ford, chairman; George Troutt and George R. Ford.

TOLEDO, Oct. 6.—The third meeting of the Toledo Automobile Club was held last Saturday night at the office of General Palmer, Jr., which is to be the headquarters of the club until regular quarters can be secured. The committee appointed to investigate the advisability of holding a race meet this fall reported favorably, but no definite action was taken. The resolution was submitted for further investigation and another meeting was called to hear the final report next Saturday night. If possible, the club will arrange for a meeting to be held on October 22 at the fair ground track. In the meantime the committee will try to secure the promise of Alexander Winton and others with notable machines to take part.

Council Bluffs A. C. Election.

Special Correspondence.

COUNCIL BLUFFS, Ia., Oct. 4.—At a recent meeting of the Council Bluffs Automobile Club, which embraces in its membership all but one of the local citizens who own motor vehicles, officers were elected as follows: President, M. Wollman; sec-

retary-treasurer, Tom Farnsworth; inspector, L. R. Madsen; directors, H. H. Van Brunt, Dr. T. B. Lacey and W. H. Kimball. Other members of the club are L. A. Casper, T. B. Lacey, Jr., Henry Atkins, F. L. Childs and J. F. Madsen. Eight machines are represented and a ninth will be added as soon as the owner can be corralled within the fold. Several of the members are enthusiastic on the subject of cross country runs and these will be indulged in as often as the weather will permit. The first will probably be to Missouri Valley. The secretary of the Missouri Valley Fair has offered to hang up a \$100 prize if the members will race for it, and, as Mr. Madsen has just finished the construction of a racing machine, it is expected that all of the local club members will attend the fair, with a contingent from Omaha. The developments are awaited with interest.

WORK FOR STATE ORGANIZATION.

Secretary Elliott of Syracuse A. C. Outlines Plans and Work for Club Union.

Special Correspondence.

SYRACUSE, N. Y., Oct. 4.—Frederick H. Elliott, secretary of the Automobile Club of Syracuse, will soon resume his work of forming a New York State Association of Automobile Clubs. His plan is to have the president, vice-president and secretary or treasurer of all the automobile clubs in the state organize for the purpose of protecting automobilists from unreasonable legislation and for such other objects as may arise.

"When we want anything at Albany," said Mr. Elliott, "it does not do any good for some members of the New York club and possibly one or two others to appear and attempt to urge anything upon the legislators, but if one man each from Buffalo, Binghamton, Syracuse, Rochester, Utica, and other cities, would urge the same thing, something could be accomplished. The legislators want to be assured that there are a large number of people who want a certain law, or want it defeated. Another reason why there should be a state association is so that the members could work on their representatives at home. They can do more good with men with whom they are acquainted than they can with strangers. Organized demands upon the members of the legislature will do a great deal. One change that should be brought about is the measuring of speed by minutes to the mile instead of miles to the hour. There are very few people who can tell anywhere near at what speed a vehicle is going."

Students of the Yale University in New Haven, Conn., are forming the Yale Automobile Club. Enough men in the university own machines to insure a live organization and it is the intention to secure a barn as their own station for storage and repair purposes.

INDUSTRIAL NOTES.

CLEVELAND TO HAVE A NEW MODEL AUTO ESTABLISHMENT.

WHOLESALE AND RETAIL STORE.

Plans of Cleveland Automobile and Supply Co. for Pretentious Store in the New Center—Some Details of New Electro-Gasoline Waverley Vehicle Now Coming Through Indianapolis Plant.

Special Correspondence.

CLEVELAND, O., Oct. 6.—According to plans announced by the Cleveland Automobile & Supply Co., Cleveland is soon to have a magnificent automobile establishment equaling anything in the country. During the past two years the company has occupied a pretentious store in the Electric Building, where it has handled a full line of motor vehicles and supplies of all kinds, besides conducting an extensive business in repairing and storage. The rapid growth of the business this year necessitates larger quarters, so the company has decided to plan for some years to come.

A tract of land has been secured near the corner of Prospect and Erie Streets—the new center—and as soon as possible a large four-story building will be erected exclusively for its own use. The building will have a total floor space of 25,000 square feet, or about ten times that of its present cramped quarters, where the company is able to take care of only the machines it sells and has had to turn away much repair work and vehicles for storage. In the new quarters the company will be prepared to take care of almost any business in connection with automobiles that may be offered. One floor will be devoted to storage.

WILL DO DIFFICULT REPAIRING.

It is the intention of the company to be in a position to take care of any class of repair work, no matter how intricate, in its own establishment. There will be a machine shop with complete equipment of tools, a wood working department where bodies can be repaired or built, a blacksmith shop for heavy work, an upholstering department, a paint shop, a battery repair department, and a tire repair department. It is also the intention to devote much attention to the sale of sundries and supplies, both at wholesale and retail.

One floor of the establishment will be utilized wholly as a salesroom and the company will handle a larger line than at present. The lines already decided upon for next year are the Columbia gasoline and electric, Locomobile steam and gasoline and Waverley electric, and combination electric and gasoline. This last is a unique vehicle made by the Indianapolis plant of the International Motor Car Co. As described by

THE NEW COMBINATION WAVERLEY.

Mr. Wright, of the company, the storage battery is wholly dispensed with and in its place is hung a gasoline engine of moderate size. Directly connected to the motor is a

small dynamo or generator, and connected with this by wires is a motor which is suspended from the rear axle. The gasoline engine drives the generator, from which the current is transmitted to the motor that drives the wheels. The machine is controlled wholly by electrical devices, and at the same time it dispenses with the heavy weight and limited radius of the battery. The radius of action of the carriage is limited only by the gasoline supply. It is said the new vehicle will sell at a moderate price. It has attracted widespread attention. Mr. Wright expects the delivery of the machine about December 15, as the Waverley factory has a large number of them under way.

L. G. Wooley, of Kenton, O., who has had much experience in telegraphic invention, has announced that he has now invented a new gasoline engine which will weigh per horse power only about half as much as other makes and that it has only about half as many parts. He claims to have a machine that will weigh 450 pounds and will travel 300 miles on three gallons of gasoline.

PEERLESS COMPANY INCORPORATED.

The Peerless Motor Co., of this city, has taken out incorporation papers in West Virginia. The capital stock is placed at \$300,000, and I. M. Blanchard, L. H. Kittridge, John McGregor, Jr., F. A. Quail and G. B. Siddell, all of Cleveland, are the incorporators.

Allotments for Chicago Show.

Special Correspondence.

CHICAGO, Oct. 4.—Diagrams and application blanks have been mailed to the trade for the fifth annual Chicago Automobile Show, to be held from February 14 to 21, inclusive, in the Coliseum Building. The first allotment of spaces will be made October 15. Informal application for space had been made by more than a dozen manufacturers before the diagrams were issued. The exhibition is under the joint auspices of the National Association of Automobile Manufacturers and the Chicago Automobile Club. Samuel A. Miles, 324 Dearborn Street, Chicago, will manage the show.

New Motor Company in Nebraska.

Special Correspondence.

LINCOLN, NEB., Oct. 4.—About fifteen local business men are interested in the Cushman Motor Co., which has just been organized and incorporated with an authorized capital stock of \$50,000. The incorporators are H. W. Davis, E. E. Cushman and L. S. Cushman.

New N. A. A. M. Officers.

At a meeting of the executive committee of the National Association of Automobile Manufacturers, held in New York on September 30, H. Ward Leonard, formerly third vice-president, was elected first vice-president to succeed A. L. Riker; Frederic

Martin Lande, formerly secretary, was elected second vice-president, succeeding Dane E. Rianhard; Charles Clifton was made third vice-president; Harry Unwin, formerly assistant secretary, was made secretary, and Windsor T. White was elected to the executive committee.

The committee decided to present a framed copy of the engraved standard warranty to such of the associate members as desire it, as well as to the active members, the new guarantees having just been printed. Practically all of the active members have signified their intention of adopting the standard form. In addition to trying to standardize the number of spoke and lug holes for single-tube tire rims and the rim sections for double-tube tires, the association proposes to bring about the adoption of a standard section for solid tires.

WESTINGHOUSE EXHIBITS.

Electrical Equipment for Pleasure and Commercial Vehicles Shown to Carriage Builders.

An elaborate display, comprising twenty-six exhibits, was made during last week at the convention of the National Carriage Builders' Association at Detroit, by the Westinghouse Electric & Mfg. Co., of Pittsburgh. A similar display was made by the company at the Philadelphia convention of the American Carriage Builders' Association, from September 13 to 18. The purpose of the exhibit is to show the electric equipment made by the Westinghouse company for use on motor vehicles for pleasure and commercial purposes. A leading feature of the display is an Adams Express Co. wagon that has been in use for seven months and which is fitted with the Westinghouse type B double motor equipment. Another is a complete type B double motor equipment assembled on the frame of an express wagon of moderate size, demonstrating the adaptability of the Westinghouse apparatus to standard types of wagons and carriages. With a similar object is shown the skeleton frame of a standard surrey, equipped with a complete type A 80-volt, high-speed, plain bearing, double motor equipment.

Included in the display are five detached motors especially suited to meet the severe conditions under which the electric motor is operated and capable of sustaining for one hour a load of 100 per cent. above the normal rating, and to commute perfectly up to an overload of 200 per cent. The frames are tubular and are especially designed for universal methods of suspension and to facilitate removal, inspection and repair. These motors are of 40- and 80-volt capacity, high and low speed, to meet the different requirements of passenger and merchandise transportation, up to 11,000 pounds at six miles an hour. The type A A, is a 20-volt motor having ball bearings and designed for the operation of light runabouts at reasonable speeds.

STORAGE, REPAIR AND SUPPLY STATIONS

CONNECTICUT

SPEED—Outside city limits, 15 m.; inside, 12 m.; reduce at crossings; penalty for violation, not more than \$200. **HORNS or GONGS**—Not required by letter of law. **LAMPS**—Required on all rubber-tired vehicles; must be lighted from 1 hour after sunset to 1 hour before sunrise; penalty, \$5. If lights go out, operator "may proceed at 6 m. and give audible signal as often as 500 ft. are passed over."

HARTFORD

304 ALLYN ST. Phone 219-2
S. A. Miner. Phone Will Bring Our Repair Car Anywhere. Storing, Repairing, Charging, Gasoline. Always open.

43 WELLS ST. Phone 165
Hartford Automobile Station. Open Day and Night. Storing, Repairing, Charging, Gasoline. All Supplies. Oldest, Largest and Best.

NEW HAVEN

SPEED, ETC.—See state law. **PARKS**—Not allowed in some. **HORNS or BELLS**—Not required by letter of law.

105 GOFFE ST. Telephone 416-3
H. C. Holcomb. Storage, Repairing, Supplies. Automobiles Exchanged, Bought and Sold. We can sell your Auto.

532 STATE STREET. Phone 1412-12
Reichert's Auto. Station. Storing, Repairing, Charging, Supplies. Agent for Winton U. S. Long Distance Mobile.

DIST. OF COLUMBIA

WASHINGTON

SPEED—Outside city limits, 15 m.; off car-line streets, 12 m.; on intersecting car-line streets, 6 m. **LICENSE**—Required; fee, \$3; penalty, for operating steam vehicles without permit, \$1 to \$40.

1124 CONN. AVE., N.W. Phone Main 3027.
The National Capital Automobile Co. Agents for the Oldsmobile, Autocar and Packard. Storage, Repair and Supply Station.

ILLINOIS

CHICAGO

SPEED—Everywhere in town, 8 m. **BELLS**—Required, to be sounded at street crossings, etc. **WHISTLES and HORNS**—Prohibited. **LAMPS**—Required; must be lighted between dusk and dawn. **LICENSE**—Operators required to have license; fee, first year, \$3; thereafter, \$1. **NUMBERS or INITIALS**—Not required. **BRAKES**—Two sets required, one independent of driving gear. **SPECIAL**—No machinery may be left running when vehicle is standing in street with no one in charge.

5311-13 COTTAGE GROVE AVE. Phone Drexel 9363
C. A. Coey & Co., Agents for Woodruff Automobiles. Storing, Repairing, Renting and Supplies.

4 CALHOUN PLACE, near Dearborn. Tel. Central 4334
A. J. Millman. Storing, Repairing, Remodeling and Supplies.

285 N. STATE STREET. Telephone North 1430
Chicago Automobile Repository Co. Storage, Repairing, Remodeling and Supplies.

385 E. SUPERIOR STREET, Rear. Tel. North 1522
North Division Auto. Co. Automobiles Sold, Repaired, Charged and Stored.

12 PLYMOUTH PLACE. Phone Jackson 393
S. S. Williams. Special Machine Work. Gasoline Engines, Automobile Repairing.

VAN BUREN and OAKLEY BLVD. Phone West 252
Hagmann & Hammerly. Storage, Repairing, Remodeling. Agents Remington.

INDIANA

TERRE HAUTE, IND.

25 S. SEVENTH ST. Phone 7522
A. Chaney & Bro. Agents for Mobile, Steam and Waverly Electric. Storage, Repairing and Supplies.

IOWA

CEDAR RAPIDS

CEDAR RAPIDS SUPPLY CO.
J. C. Pickering, Pres. and Treas. General Storage and Supply Station. Agents for Rambler Gasoline, Toledo Steam and Waverly Electric Machines.

MASSACHUSETTS

SPEED—Outside city limits, fire district or thickly settled part of a town, 15 m.; inside such limits, 10 m.; approaching horses, reduce speed if animal shows fright and stop on signal of driver; reduce at crossings. **PENALTY**—Fine not exceeding \$200, or imprisonment not exceeding 10 days, or both.

BOSTON

SPEED—In city streets, 10 m.; in parks, 8 m.; outside city, 15 m. **LAMPS**—Three required. **PARKS**—Permit required from Park Department.

43 AND 45 COLUMBUS AVENUE
G. T. Gould, Boston Agency for the U. S. Long Distance Car.

147-153 COLUMBUS AVENUE
Columbus Automobile Exchange—A. J. Coburn & Co. Automobiles and Motor Cycles. Sole Agents for Orient, Elmore, Crestmobile, French Darracq Cars.

147-153 COLUMBUS AVENUE. Phone 388-2 Tremont
Columbus Automobile Exchange, New England Agents for Steam and Gasoline Automobiles. Storage, Repairing, Supplies.
Entrances Clarendon & Stanhope Sts. Tel. 251-9 Trem't
Back Bay Hydro-Carbon Repair Co. Gasoline Car Repairing a Specialty. All Work Done by Experts. First-class Storage Station.

66-68 STANHOPE STREET. Telephone 211 Tremont
Automobile Headquarters. Eastern Agents for Knox, St. Louis, Gasmobile, Stearns, Pierce Motorettes. Also French and American Touring Cars. Open night and day the year 'round.

TREMONT and BERKLEY STS. Phone 1097 Tremont
Boston Salesrooms, Odd Fellows Building. "White Steamers." Stanhopes, Phaetons and Touring Cars. First-class Storage and Repair Stations.

CAMBRIDGE

424 MASS. AVE. Phone 142 Cambridge
Crest Mfg. Co. Repairing, All Supplies. Expert Mechanics and Electricians Furnished. Makers of Crestmobile; \$600. Crest Gasoline Motors, Collis and Parts.

8-10 PALMER STREET. 72-2 Cambridge
Harvard Automobile Co. Storing, Charging, Repairing, Building. Always Open.

SALEM

COR. DODGE AND LAFAYETTE near Depot.
Phone Day, 438-4; Night, 106-4.
Repairing, Storing, Gasoline. All Supplies.
Zina Goodell Mfg. Auto Parts and Machines to Order.

SPRINGFIELD

SPEED—State law applies. Reduce at street intersections. **LAMPS**—Required 1 h. after sunset; not enforced. **ALARM**—Required to be sounded as necessary. **PARKS**—Permit required for Forest Park; furnished free; rules accompany permit. No registration.

36-38 DWIGHT ST. Phone 869-12
Automobile Headquarters. J. E. Cowan, Mgr. Storing, Repairing, Charging, Supplies.

TAUNTON

4-5 POST-OFFICE SQUARE. Phone 209-3
Repairing, Gasoline, Water and Supplies. Robertson Auto Station.

WALTHAM

136 NEWTON ST. Phone 255-3 Waltham
Repairing, Storing, Gasoline, Supplies. Waltham Automobile Co. Mfg. of Piper Burners and Steam Automobiles.

WORCESTER

SPEED—10 m. **GONG or HORN**—Required. State law applies.

43 FOSTER, corner COMMERCIAL. Phone 659-4
Worcester Automobile Station, No. 1. Agents for Packard, Oldsmobile, Autocar and Rambler. Storing, Charging, Repairing, Supplies. Always open.

671-673 MAIN ST. Phone 1550

Robinson Automobile Station, Agents for U. S. Long Distance, White, Locomobile, Waverly. Storing, Charging, Repairing, Supplies.

NEW JERSEY

ATLANTIC CITY

1003 ATLANTIC AVE. Phone, Local 677, L-Distance 63A
J. C. W. Parsons, Agent for Locomobile and Electric Automobiles. Storing, Repairing, Gasoline and Supplies. Open always.

12 SO. MARYLAND AVE. Phone 544XBell
H. W. Cochran, Agent for Electric Vehicle Co. Charging, Storing, Repairing, Gasoline, Supplies.

NEWARK

SPEED—In Newark, 8 m.; outside Newark, in Essex County, 15 m.; rounding corners, 4 m. **HORN or BELL**—Required to be sounded 100 ft. from other vehicles. **LAMPS**—One required, to be lighted 1 hour after sunset. **LICENSE**—Required; fee, 50 cents. **INITIALS**—Required on vehicle.

MECHANIC STREET, 27. Phone 3071 Newark
W. B. Dodge. Agent Electric Vehicle Co. Charging, Repairing, Storing and Supplies.

PATERSON

SPEED—No regulation. **HORNS or GONGS**—Some alarm required. **LAMPS**—Required between sunset and sunrise.

450 BROADWAY. Telephone 243
F. W. Stockbridge, Automobile Headquarters. Agent for Imported French Darracq, Oldsmobiles, U. S. Long Distance, Prescotts, Locomobiles, Waverlys. Storing, Charging, Repairing and Supplies.

NEW YORK

COCKS LAW—**SPEED**—Outside corporate limits, 20 m.; on bridges, 4 m.; inside corporate limits, 8 m., except where higher speed is permitted by local ordinance. **PENALTY**—A fine not exceeding \$50, or imprisonment not exceeding 6 mos., or both. **HIGHWAY LAW** (Doughty)—**SPEED**—Outside built-up parts of towns and villages, 15 m.; in built-up sections of towns, 8 m. Must stop on signal of driver to let restive horses pass. **REGISTRATION**—Owner must obtain certificate from Secretary of State within 10 days after purchasing vehicle; fee, \$1. **INITIALS**—Required to be fixed to back of vehicle and must be 3 in. high and 1/4 in. wide. **LAMPS**—Two required showing white light in front; also red light visible behind; must be lighted between from 1 hour after sunset to 1 hour before sunrise. **BELL or HORN**—One or other required. **BRAKES**—Required to be good and efficient; penalty, fine not exceeding \$25. **LOCAL ORDINANCES**—The state road law prohibits local town and park boards from excluding automobiles and bicycles from open public highways; from placing lower speed limits than 2 m. and 15 m. in unbuild-up parts of towns, and from requiring license or permit except from owners of public vehicles.

ALBANY

SPEED, LIGHTS, ALARM, INITIALS, ETC.—State law applies. **BRIDGE TOLL**—Single seat, 10 cents; double seat, 15 cents.

97-99-101 CENTRAL AVENUE. Phone 1509F L.D's.
Automobile Storage & Trading Co., General Agency for Automobiles. Storage, Supplies, Repairs. Competent Attendants.

167 NORTH PEARL STREET. Long Distance 967
Albany Automobile Works, Motor Vehicles of all Types Stored and Repaired. Machine Shop Attached. Charges Moderate.

255 SHERMAN STREET. Phone 257F West
C. F. Weeber Mfg. Works. The Largest and Best Equipped Automobile Repair Shop in the city. Mfr. of Weeber Muffler.

AMSTERDAM

8 DIVISION ST. Bell Phone 260
Gode & Brown. Agents for Locomobile and Motor Cycles. Storage, Cleaning, Supplies. Up-to-date Repair Shop. Always Open.

BROOKLYN

712 BEDFORD AVE. Phone 537 Williamsburg
Lincoln C. Cochen. Charging, Storage, Repairs. Batteries a specialty.

752 BEDFORD AVE. Phone 2356A Williamsburg
J. W. Mears, Exclusive Agency U. S. Long Distance Car. Automobiles Stored, Repaired, Sold and Exchanged.

1148 BEDFORD AVE. Telephone 2422 Bedford
Arthur R. Townsend. Agent for the Waverly Electric, Toledo Steam, Toledo Gasoline Car, Knox Gasmobile. Charging, Storing, Repairing, Supplies.

10 CLINTON ST., near Bridge. Phone 1225 Main
Maltby Mfg. Co., Agents for Mobile, Olds, National Electric. Storage, Repairs, Batteries Charged, All Supplies.

342 FLATBUSH AVE., near Eighth. Phone 1681 Main International Motor Car Co. Charging, Storage, Repairing, Supplies. Open day and night.

473 FLATBUSH AVE. Phone 618 Flatbush Ave. Alex. Schwalbach, Agent for All Popular Makes. Motor Cycles and Their Repairs a Specialty. Practical Repairer of Gasoline Automobiles. Carriage Tires Repaired and Replaced. Bicycles. Long Island Agent for the Racycle.

1239-43 FULTON ST., nr Bedford Av. Phone Bedford 705 Brooklyn Automobile Co., Agents Haynes-Ap-person, Oldsmobile, Locomobile. Charging, Repairing, Supplies.

1241 FULTON ST. Phone 705 Bedford Chas. W. Spurr, Jr., exclusive agent for Brooklyn and Long Island for Crestmobile. Price \$600. Call and take a ride.

3 PROSPECT PARK WEST. Phone 969 Prospect Prospect Park Storage Co., Agents National Electric. Charging, Repairing, Storing, Supplies.

58 SCHERMERHORN ST. Phone 3710 Main Patterson & Shaw, Agents Elmore, Gasmobile, Waverley. Storage, Repairing, Charging, Supplies.

BUFFALO

SPEED—8 m.; on Main Street, south of Chip-pewa, 5 m.; rounding corners and at street and alley intersections, 5 m. HORNS or GONGS—Not required. LIGHTS—Required all hours after nightfall. REGISTRATION, etc.—State law applies.

873-875 MAIN ST. Phone 468 Tupper The W. C. Jaynes Automobile Co. Storage, Charging and Repairing Station. Complete line of Automobile Sundries. Agent for Oldsmobile, Winton, National Electric and Buffalo Electric Vehicle Co.

NEW YORK CITY

SPEED, LAMPS, BELLS, LICENSE—See state laws. FERRIES—Will carry any class of vehicle with tanks filled if engine is stopped and fire extinguished; toll, same as for teams. BRIDGE TOLL—Same as for teams.

37th STREET, 515 7th AVE. Tels. 6495 & 6496 - 38th Smith & Mabley, Importers of Panhards, C. G. V., Renault Automobiles, Parts and Supplies. The American C. G. V. Gasoline Cars. Storage and Charging Station. Open Day and Night. Specially Equipped for Repair of Foreign Cars.

38th ST. 136 WEST. Phone 476 38th St. Standard Automobile Co. Sole U. S. Agents for the Decauville French Car. Also American Gasoline Cars. Thoroughly Equipped Repair Shop, Employing Only Skilled Mechanics. Parts, Replacements, Supplies and Storage.

38th ST. 136 WEST. Phone 6684 38th St. The Oldsmobile Co. New York Agents Oldsmobile Gasoline Runabouts.

434, 38-40 WEST. Telephone 691—38th. A. G. Spaulding & Bros., Agents for the Automobiles, Oldsmobiles and Waverley Electric. Charging, Repairing, Storing, Supplies. Open Day and Night.

43d ST. 50 WEST. Telephone 2289—38th Banker Bros. Co., Agents for Peerless Gasoline Cars, Pierce Motorcycles and De Dion Parts. Storage, Repairs, Charging and Supplies. Open Day and Night.

44th ST. 307 WEST. Tel. 64868 38th St. Long Acre Auto Depot. Storing, Repairing, Supplies. Second Hand Machines Bought and Sold.

44th ST. 523 FIFTH AVE. Tel. 6029 38th St. Westchester Auto. Co. Agents for Leading French and American Automobiles. Storage, Repairs, Supplies, etc.

50th ST. 239 WEST. Tel. 902 Columbus Alexander Fisher. The Georges, Richard, Mercedes, Rochet-Schneider.

51st STREET, 143 WEST. Phone 1601 Columbus Knickerbocker Automobile Station, S. O. Min-ter, Mgr. Storage, Charging, Repairing and Supplies.

53d STREET, 1684 BROADWAY. Phone 2397 Col. Central Automobile Co. Sole U. S. Agents for Peugeot, Mora, Cottareau. N. Y. City Agents Electric Vehicle Co., of Hartford. Charging, Storing, Repairing. Parts for French Vehicles. All Kinds of Supplies. Open Day and Night.

57th STREET, 140 EAST. Phone 1161 38th St. John Wanamaker. Fournier-Searchmont, Baker. Mobile. Charging, Storing, Repairing and Supplies. Open Day and Night.

57th ST. 154 EAST. Phone 3473 - 38th St. Metropolitan Motor Car Co. Expert Repairs for All Makes of Vehicles. Charging and Supplies.

58th STREET, 33-39 EAST. Phone 762 - 38th Barry & Hayes. Storage of Foreign Machines a Specialty. Repairs and Supplies.

58th ST. 150-152 EAST. Telephone 4421 - 38th St. Winton Motor Carriage Co., Branch House. Storage and Repairs for Wintons Only.

59th ST. 306 WEST. Telephone 2060 Columbus A. Elliott Ranney, Agent for Remington, Prescott, Darracq, Waverley and Toledo. Storage and Supplies.

59th ST. WEST, 317-319. Telephone 623 Columbus Adams-McMurry Co., Agents for Packard Gasoline Cars. Repairing, Supplies.

60th STREET, 10 WEST. Phone 1874 Col. Webster Auto. Co. Agents Webster Gasoline Tonneau Car, Prescott Steam Carriages. All Makes of New and Second Hand Carriages Purchased, Exchanged and Sold. Storage, Repairs and Supplies.

60th STREET, 38-40 WEST. Phone 2440 Columbus American Storage Co. for Automobiles. Five Floors and Basement. Storage, Charging, Repairing and Supplies. Special Facilities for Taking Care of Foreign Machines and Oldsmobiles. Open Day and Night.

66th ST. 57 WEST. Tel. 1271 Columbus St. Nicholas Automobile Depot. Storage, Charging, Repairing and Supplies. Open Day and Night.

80th ST. 250 WEST. Phone 2562 Riverside Pa-delford & Bell, Agents for Columbia Electric Automobiles. Salesroom, Storing, Repairing, Supplies.

86th ST., 205-207-209 EAST. Tel. 3269-79th St. Yorkville Auto. Station. Exceptional Storing Facilities. Repairing and Supplies.

89th STREET, 202-210 WEST. Tel. 144 Riverside West End Storage Co. Dead Storage \$5.00 to \$10.00 a Month. Live Storage. Repairs and Charging.

98th ST. and FIFTH AVE. Telephone 2369 - 79th St. E. R. Fisher, Prop. Storing and Repairing Steam and Gasoline Only. Supplies.

100th ST., Cor. Broadway. Tels 2686 & 2687 Riverside Homan & Schulz, Sole New York Agents for Northern Gasoline Runabouts. Also Agents for Darracq, Locomobile, Waverley and Woods. Best Facilities for Difficult Repair Work. Storage, Charging and Supplies.

120th ST. 175 EAST. Phone 1444 A Harlem Chas. Strathman, Agent for Mobile. Storing, Repairing and Supplies.

127th ST. 152 WEST. Phone 3326 Harlem West End Automobile Exchange. Storing, Repairing, Cleaning, Supplies. Always open.

127th STREET, 153-159 WEST. Phone 1549 Harlem Harlem Automobile Co. Storing, Charging, Repairing and Supplies. Tire Vulcanizing on Premises.

1918 JEROME AVE., nr 177th St. Phone 233 Tremont Hoffman & Setzer. Repairs, Storage, Supplies and Painting.

ROCHESTER

150-170 SOUTH AVE. Phones 3 Bell, 3 Home Rochester Auto. Co., Jos. J. Mandery, Prop. Agent for Columbia, Studebaker and Baker Electric, Winton, Peerless, Oldsmobile, Pierce, Columbia, Locomobile Gasoline and Locomobile Steam. Storage, Charging, Repairing and Supplies.

74 EXCHANGE ST. Tels. 959 Main Bell. 785 Home C. J. Conolly, Agent for Mobile and National. Storing, Charging, Repairing and Supplies.

SYRACUSE

SPEED, ETC.—See state law. No local legislation.

346-348 SO. WARREN ST. Phone 955 New Syracuse Automobile Co. (Incorporated), Agents for Locomobile, Oldsmobile, Waverley. Storage, Repairs, Gasoline and Lubricants. Special Attention to Tourists.

110 WEST ONONDAGA ST. New Phone 2186 A Hoffman & Weaver, Agents for the "Mobile." Finest Equipped Repair Shop in City. Sundries and Storage.

TROY

359-361 FULTON STREET. Phone 399M James Lucey, Automobile Exchange. Stearns, Gasoline and Electric. Storing, Charging, Repairing, Gasoline.

UTICA

ONEIDA SQUARE. Phone 884-A Miller-Mundy Motor Carriage Co., Agents for White Steamer, Pierce Motorcycles, Waverley Electric. Storing, Repairing, Charging, Gasoline. Special attention to Tourists.

OHIO

CLEVELAND

SPEED—Within $\frac{1}{4}$ -mile from east and west ends of Superior Street viaduct, 7 m.; outside such radius, 15 m. Must stop upon signal from horse driver. LICENSE—Required; fee, \$1. NUMBERS—Registered numbers must be attached at rear and kept clean. LAMPS—One on each side must be kept lighted during darkness. BELL or HORN—Required, and must be sounded when there is danger of accident. PENALTY—For violation of any section, fine not exceeding \$50.

COLUMBUS

SPEED—Off of business streets, 14 m.; on business streets, 8 m. PENALTY—Fine from \$5 to \$50 or 30 days' imprisonment. BELLS or HORNS—One or other required, to be sounded when necessary. LAMPS—Required after dark. PENALTY—Fine not exceeding \$50.

TOLEDO

SPEED—Inside city limits, 10 m.

CINCINNATI

SPEED—In streets and parks, 8 m. HORNS or GONGS—Must be sounded 100 ft. before street crossings. LAMPS—Must be lighted between sunset and sunrise. BRAKES—Efficient brakes required. LICENSE—none required. INITIALS—None required. TOLLS—Bridge toll, 10 cents. SPECIAL—Two vehicles must not travel abreast.

640 MAIN STREET. Phone Main 3107 The Special Motor Vehicle Co. Agents for Fournier-Searchmont and Spaulding Lines. Rebuilding and Repairing Motor Vehicles. 807-809 RACE STREET. Phone Main 2329 The Cincinnati Automobile Co. Agents for Toledo and Rambler Lines.

PENNSYLVANIA

PHILADELPHIA

SPEED—Inside city limits, 7 m. Parks, same. BELLS or GONGS—To be sounded only at crossings. LAMPS—Required. PARKS—State law limits speed to 7 m. LICENSE—Required in parks; fee, 25 cents. NUMBERS—Must be attached at rear of vehicle in parks. TOLLS—No bridge tolls, but main roads have toll gates each 2 or 3 m.; charge same as for 2-horse team. FERRY—Charge same as for 2-horse team.

246-248 N. BROAD. Phone 1-48-44 Winton Motor Carriage Co. A. E. Maltby, Mgr. Storing, Repairing, supplies—Winton Cars only.

138-140 N. BROAD ST. Phone 1-42-51A Quaker City Automobile Co., Agents for Oldsmobile. Storing, Repairing, Supplies. Open day and night.

N. BROAD 250-256. Phone 1-37-42 Pennsylvania Electric Vehicle Co., Exclusive Licensees of Pa. for Columbia Automobiles. Charging, Storing, Repairing, Supplies.

N. BROAD ST. 304. Phone 1-33-83 Broad St. Automobile Station, Agents for Panhard, Richard, Spaulding and Crestmobile. Storing, Charging, Repairing, All Supplies. Open day and night.

23d and WALNUT STS. Phone 1-38-65 John Wanamaker. Fournier-Searchmont, Baker, Mobile. Charging, Storing, Repairing and Supplies. Open day and night.

PITTSBURG

SPEED—In city streets, 12 m.

5909 CENTER AVE. Phone 1664 East Pittsburg Automobile Co. Repairing, Charging, Storage and Supplies.

YORK

SPEED—In city limits, 8 m. LAMPS—Must display one or more lights.

REAR 14 NORTH GEORGE ST. Phone 42251 J. P. Oden. Automobile Exchange. Storing and Charging. First Class Repairing Only.

COR. MARKET & BEAVER. Express Bldg. York Phone J. H. Snyder, Storage, Repairing, and Supplies. Agent for Oldsmobile.

RHODE ISLAND

SPEED—Outside compact parts of cities and towns, 10 m.; inside, 8 m.; reduce at crossings. INITIALS—Resident owners must display initials in block letters 1 in. high. BELLS and HORNS—One or other required, but must not be used excessively. MUFFLER—Required at all times on public highway. PENALTY—Fine of \$10 or 10 days' imprisonment for first offense; doubled for subsequent violations.

PROVIDENCE

SPEED—In city, 10 m. LAMPS—Three required.

OPPOSITE UNION STATION. Telephone 1058 H. G. Martin & Co., Agent Winton. Locomobile, Elec. Veh. Co. Storing, Charging, Repairing, All Supplies. Always Open.

WISCONSIN

MILWAUKEE

601 BROADWAY. Phone Black 8072 Bates-Odenbrett Automobile Co. Storage, Repairing and Supplies.

BUSINESS NOTES

POLISHING BELTS.—High-grade polishing straps in any length and width to order and sewed with the Eureka machine silk twist, are made by H. G. Barr, of Worcester, Mass., for all purposes where a polishing belt is used. Samples of these straps will be sent free upon application. These goods have been in use for years.

BOW SOCKETS.—Leather covered bow sockets for carriage tops are well illustrated and fully described in a catalogue issued by the makers, the Ashtabula Carriage Bow Co., of Ashtabula, Ohio. A special line of these goods for automobile use is made extra large and heavy to withstand the severer stresses and vibration of the power vehicles.

SPRINGFIELD AUTOMOBILE CAPS.—Caps made in leather, silk and indigo blue cloth in exact reproduction of the latest French styles and put together by skilled workmen, are being offered by the Springfield Hat & Cap Co., of Springfield, Mass. These caps can be made with either leather-bound or brass-bound visors. They are all silk lined and are guaranteed to hold their shape. This company also makes special styles for the trade and will reproduce any style desired.

PERFECTION MAGNETO.—A magneto spark er for gasoline vehicle and launch use is made by the Perfection Magneto Co., of Anderson, Ind. The device occupies a space 8 inches long, 6 inches wide and 8 inches high, and is mounted on a spring metal base sufficiently stiff to hold a belt tight yet elastic enough to "give" for any irregularities of the flywheel or other revolving part from which the dynamo is driven, either by belt or friction pulley, thus causing a uniform pressure on the armature shaft. The brush holder is so arranged that the magneto can be run in either direction. The bearings are of hard brass, three times as long as the diameter of the shaft, and, as they are all duplicate, they can be replaced at any time. They are drilled and tapped for either wick or oilers, grease cups or ordinary oil cups. The brushes are oblong and either carbon or woven wire or both can be used. A single spiral spring holds the brushes in place, and to adjust them or to take them out it is only necessary to remove one screw, when the brush holder drops down. It can be replaced while the magneto is in motion. The armature is of crescent drill rod, the commutator or hardened copper made with an iron core insulated with fiber and mica. The armature is of the laminated core, drum type, wound with double covered silk wire, the lead wires being covered, shelled and baked. The armature and commutator are electrically and mechanically equal to high voltage machines.

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DIAMOND CHAINS

LARGE AND HARD
NICKEL STEEL RIVETS

GREAT TENSILE STRENGTH
AND ACCURACY



AVOID TROUBLE BY EQUIPPING MACHINES
WITH LARGE CHAINS

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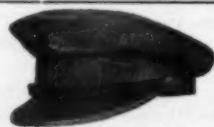
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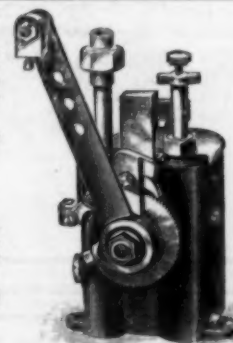
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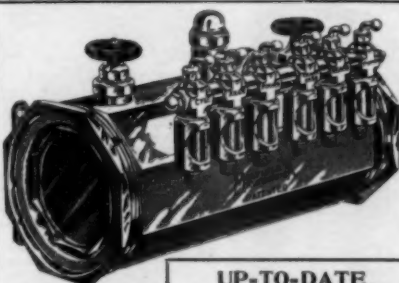
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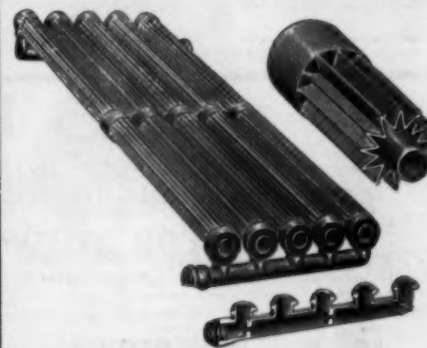
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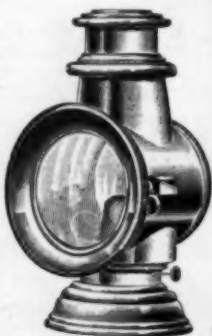


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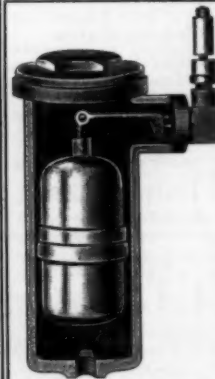
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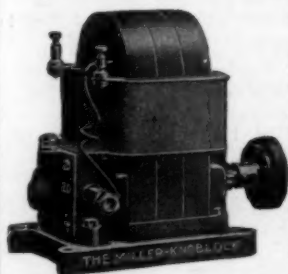
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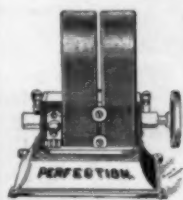
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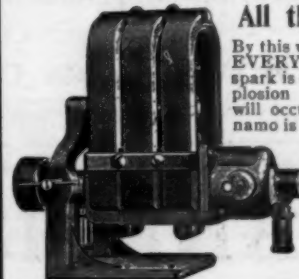


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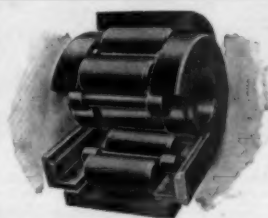
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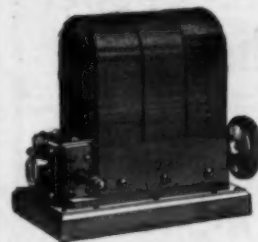
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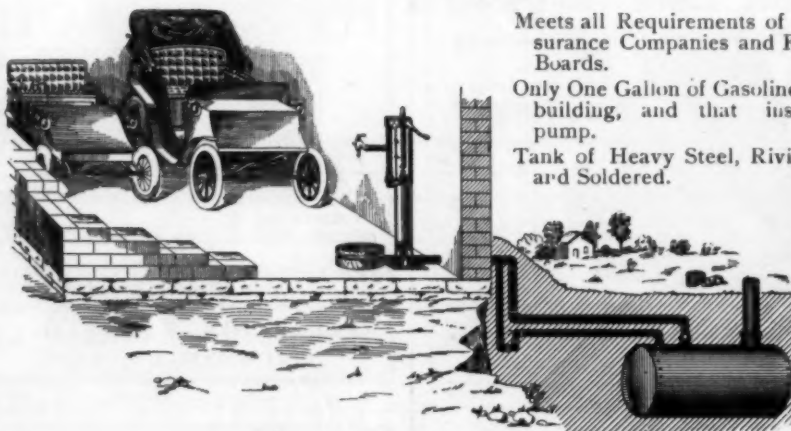
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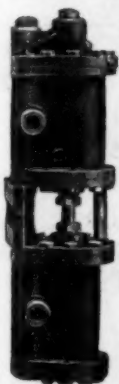
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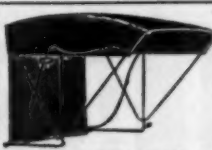
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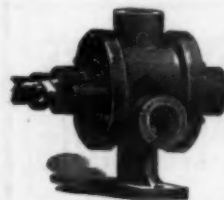


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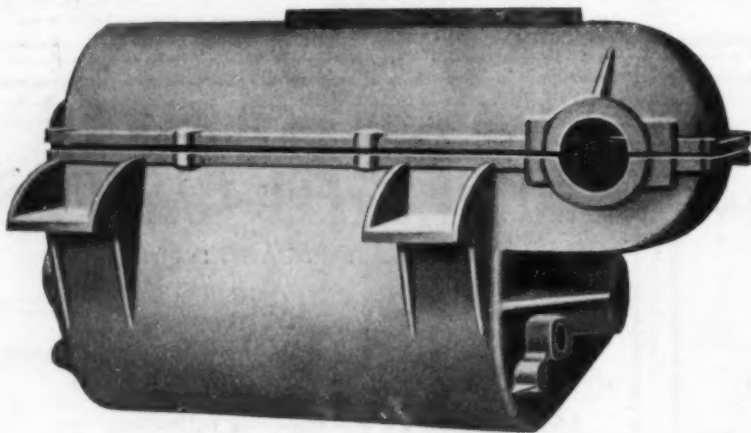
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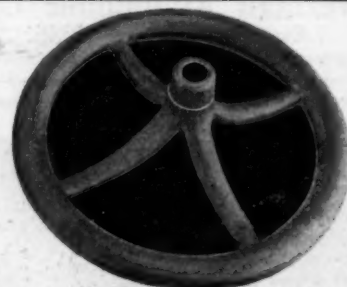
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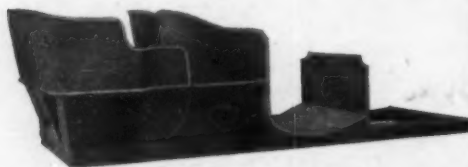
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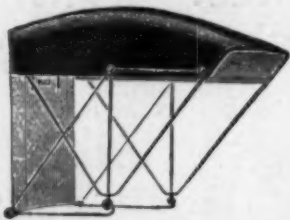
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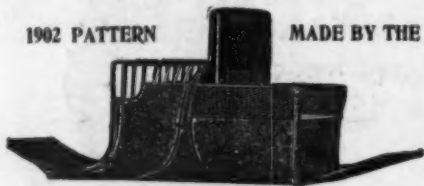


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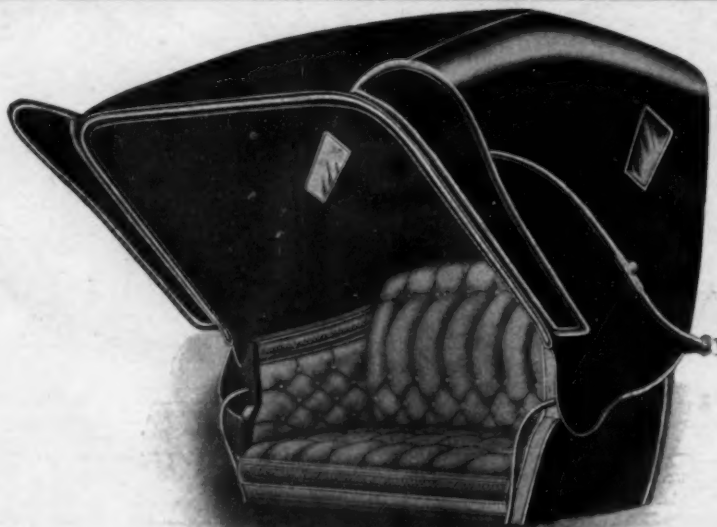
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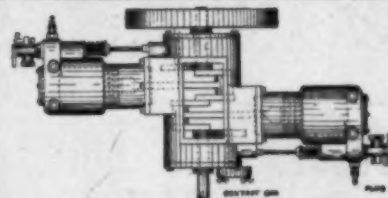
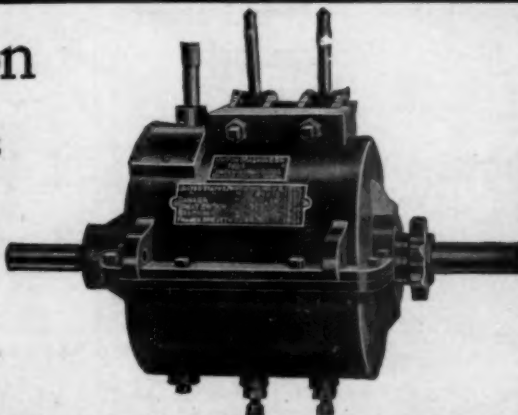
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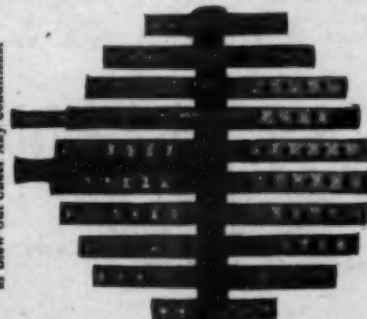
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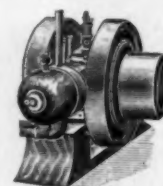
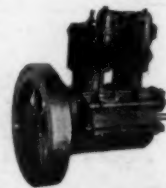
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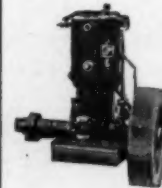
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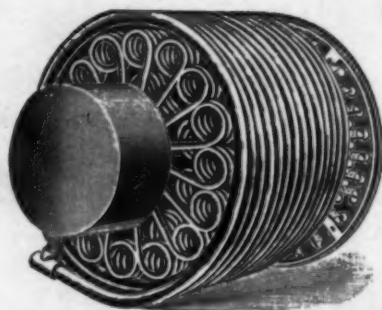
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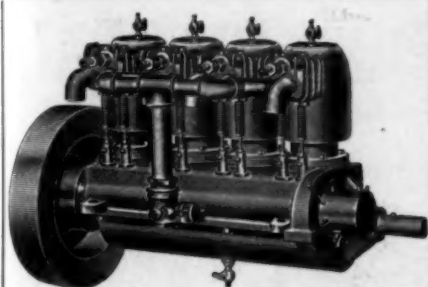
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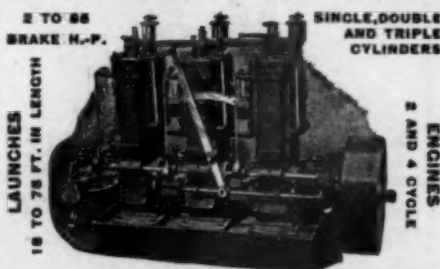
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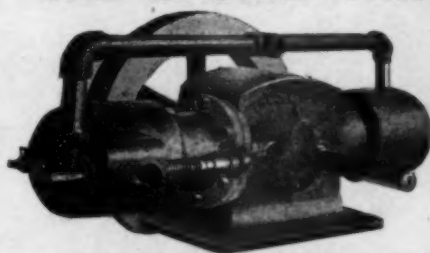
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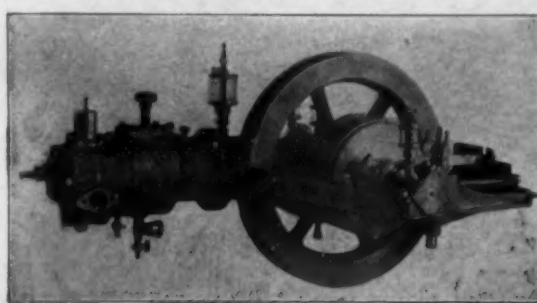
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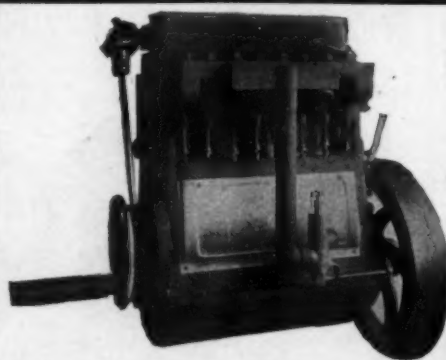
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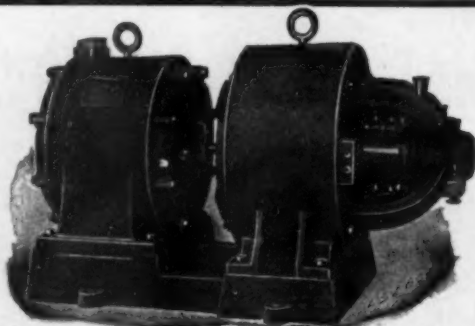
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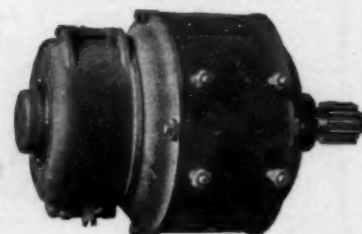
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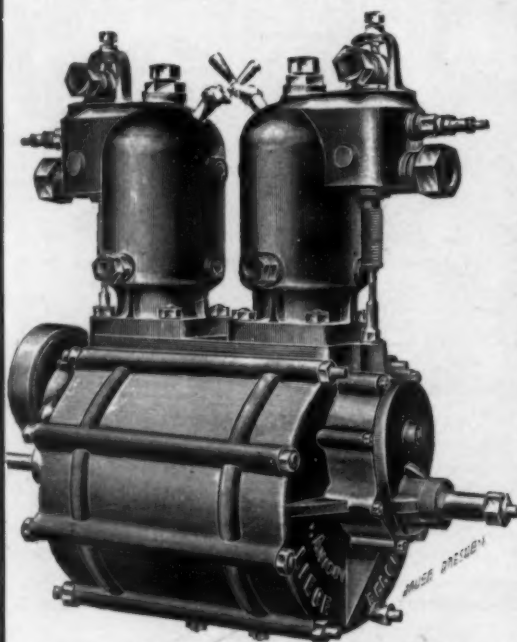


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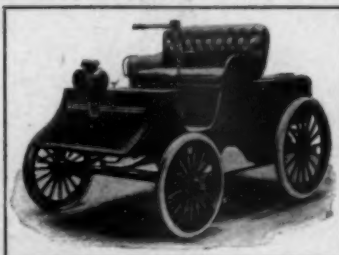
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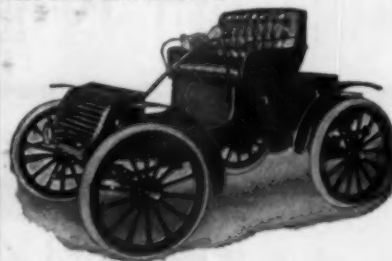
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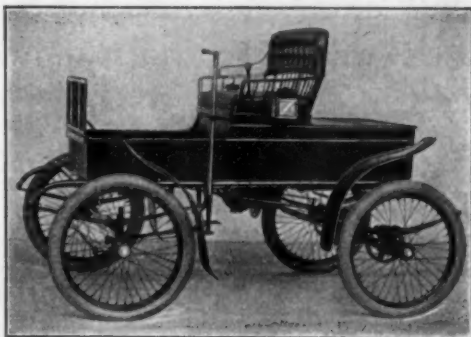
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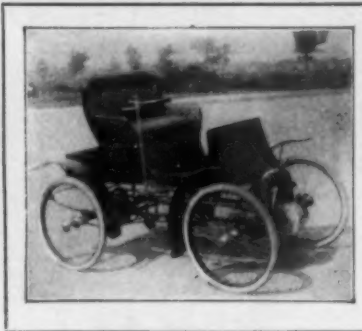
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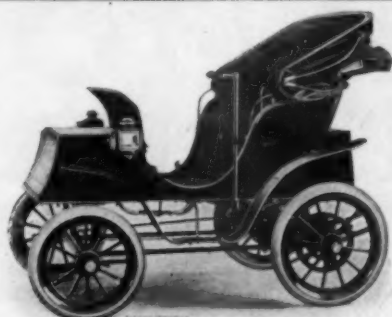
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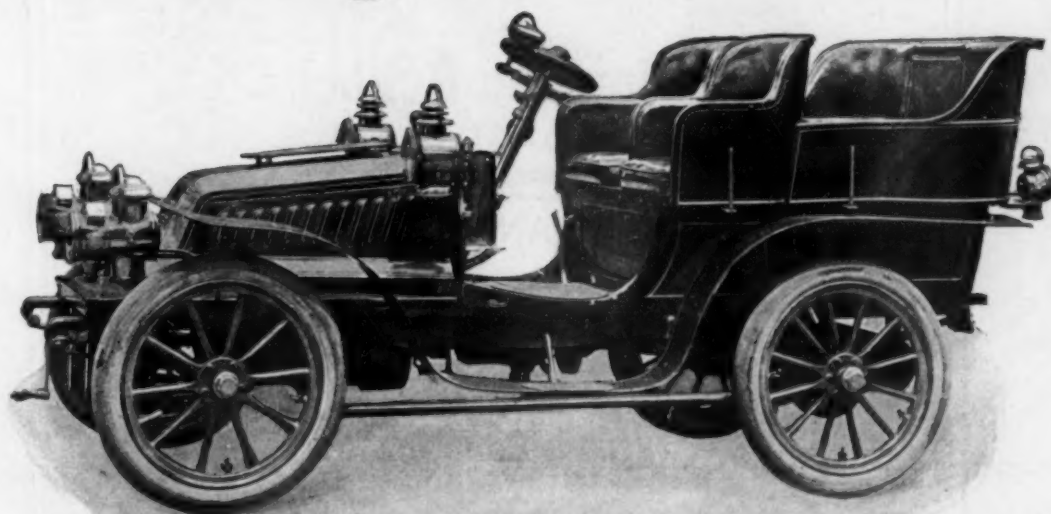
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